# HYGEIA

## THE HEALTH MAGAZINE

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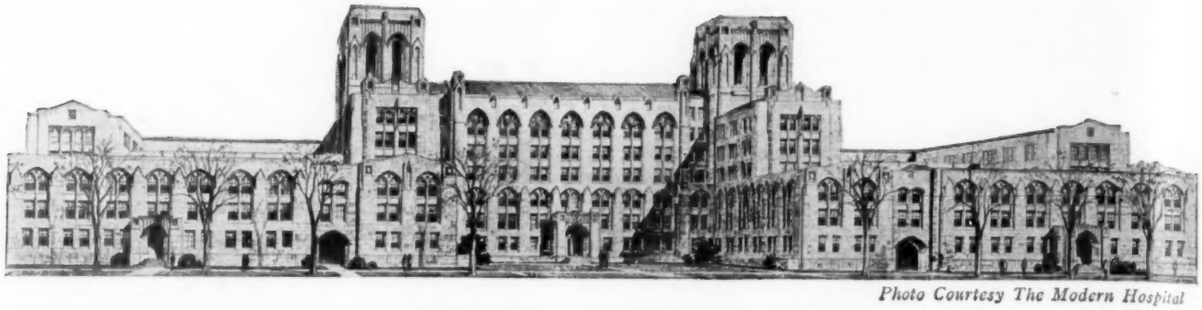


*Photo Courtesy The Modern Hospital*

*University of Chicago Press*

# TEMPLES OF HEALING

## I. The University of Chicago Clinics

# A Formula for Health

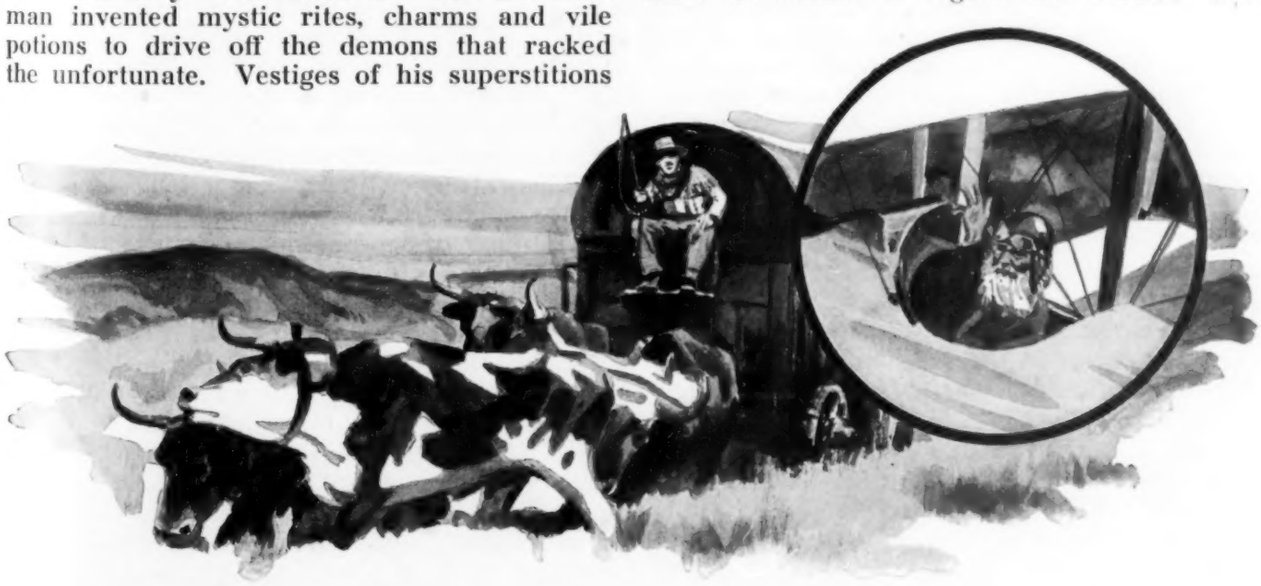
## By H. E. Kleinschmidt

EZRA MEEKER in 1852 trekked the Oregon Trail to Washington in six months. At the age of 93, he flew the same route in twenty-four hours. Man has a penchant for the short cut. Detailed facts, painstakingly explored, he reduces to concentrated formulas. Scientific technicians employ algebraic symbols to speed their calculations. The housewife bakes biscuits according to recipe. And thousands of nonmechanical persons race through city streets with enormous horse-power in their hands, because engineers are ingenious enough to "formulate" complicated mechanism into an auto. The tendency to reduce complex ideas into simple formulas extends even to philosophic thinking. Indeed, the spirit is often suffocated because old creeds, the symbols of religious thought, fail to harmonize with newer scientific conceptions and we are intellectually too lazy to explore for ourselves.

Man's age-long groping for a health formula is pathetic. He wants an abracadabra, a touchstone, a set of sure-fire rules that will guarantee him immunity from sickness. The medicine man invented mystic rites, charms and vile potions to drive off the demons that racked the unfortunate. Vestiges of his superstitions remain, for example, in the belief that the carrying of a buckeye in one's right pants pocket will ward off rheumatism, that a bag of asafetida tied about a child's neck will prevent diphtheria, and that a sudden fright will "mark" the unborn child.

The humoral theory enunciated by Hippocrates and his followers was an early attempt to reduce medicine to a formula. So long as the four liquids of the body—blood, phlegm, black and yellow bile—were in nice proportion, all was well; disease was the result of an imbalance or impeded flow of the humors. In due time, the humoral theory gave way; but it died hard. To this day, spring tonics are taken to thin the blood, liver pills are recommended to accelerate the flow of bile, sassafras tea cleanses the blood, while the spine, lights and liver are "adjusted" so that the vital juices may freely flow.

The mechanistic idea of life reached a high point when Virchow demonstrated that the unit of living things is the cell and that variations of size, shape and arrangement of cells determine the nature of organs and tissues. This



*In 1852, it took Ezra Meeker six months to follow the Oregon Trail. A few years ago he covered the same ground in twenty-four hours.*

put medicine on a more rational, more orderly basis. Now that the fundamental principles of structure were understood; now that it was realized that life is but the expression of the reactions of these structures and that disease represents unfavorable reactions brought about by deleterious stimulation, it seemed reasonable to hope that soon the science of medicine might be reduced to a few basic formulas.

### *Futile Hopes*

Then came Pasteur's discovery and the new science of bacteriology; and though the champions of cellular pathology resisted the revolutionary ideas at first, it soon became evident that bacteriology did not antagonize pathology but that they supplemented each other. To the truth that disease is the result of chemical changes of the cells was merely added the knowledge that in many instances the exciting cause which brings about this change is a living organism, unseen to the unaided eye. Pasteur had conquered anthrax disease by so manipulating the laws of nature that the anthrax bacillus itself supplied the weapons for its own destruction. Von Behring wrested from the deadly diphtheria bacillus an antitoxin. The biologic laws that regulated these "miracles" seemed simple and reasonable enough, and impulsively men were led to the rosy hope that ere long an antitoxin would be found for every disease. Glorious formula! A specific cure for every ailment! But when Robert Koch undertook to find a cure for tuberculosis, the germ of which he had discovered, he failed. No, the facts of bacteriology could not be reduced to a common denominator; each germ must be studied individually and some have to this day guarded their identity.

Skipping over as of relatively little consequence the dogma of homeopathy, the magic of mesmerism, the charlatanry of Abramism, the dubious cults of various kinds, we pause once more to consider what narrowly escaped becoming the doctrine of endocrines. How fascinating it was to discover the weird powers of gland secretions! All activities of the body seemed to be inexorably controlled by the ductless glands. Personality itself, it seemed, was the sum total product of biologic reactions engendered by endocrines. Could one but classify and determine the specific action of each endocrine and learn to control it, the maintenance of health might be reduced to a few simple formulas. Futile hope!

Great is the accumulation of wisdom but great also is the wreckage of beliefs and promises. How can we, who inherit this adulterated blessing, cull out the truth and reject the false? Cannot scientific public health experts give us in a nutshell the kernels of truth? Can we not reduce these truths to a few practical rules that will guide us in the pursuit of health?

Prophets who claim to know the way are numerous. Systems of exercise, diet and mental control keep up a steady din, punctuated by snappy slogans; some silly, like "An apple a day—," some plain lies, like "A clean tooth never decays," and some useful, but not sufficiently true, like "Fresh air, good food and sunshine prevent tuberculosis." Examination of a recent popular magazine showed that the health appeal was employed in 40 per cent of the advertisements. Yet we shall search long before we find a rule of thumb as sound as that given by Oliver Wendell Holmes to a young man who wished to know how he might achieve health: "Choose your grandparents."

No, there is no formula or group of formulas that will insure health. The known facts are too vast and too complicated, and missing links are too many. Life is as yet an art, not a science. The pearl of health is not found by getting the right kind of rabbit's foot, by mechanically following a set of rules; prayer and fasting will not secure it. Must we, then, perish in a sea of detail because no one is wise enough to concentrate within a single shibboleth all that we really need?

### *The Price of Health*

Perhaps it is possible to formulate our health knowledge into general principles, compact enough to grasp but not too stilted. These principles must be mastered and applied by intelligent people. That means study and effort applied to use knowledge to control conduct; a less price will not buy health.

Much of our health protection is secured through joint action. We, the people, determine the kind of government we wish to live under. Not narrow minded or penurious in matters of health, we seek the very best, but we, the people, pay far too little attention to that arm of the government which we delegate to safeguard our lives and well being. We spend enormous sums of money for roads, we are liberal in our appropriations for education, but for public health we grudgingly permit the expenditure of approximately one cent per week per capita, though in order to purchase a full measure of community health that is now available that amount should be increased at least fivefold. There are, of course, limits to what the tax-health dollar will buy, but few communities have yet approached that limit.

Is that damaging indictment found because we are penny wise and pound foolish? Surely not. The trouble is that health protection is so intangible. Good roads, public works and the rosy faces of school children we can see. We are expert enough in these matters to determine, roughly at least, whether or not we are

receiving a good bargain for our taxes. True, the health officer can demonstrate that our health pennies return dollar dividends, to say nothing of blessings that cannot be measured by the calculating machine, but unfortunately most of us shy away from statistics as from some plague, so the lonely health officer and a few professional friends are the only ones who really know what the benefits are and what greater measure of them could be secured if the public were willing to grasp them. A fundamental plank in our "formula" of health, then, is to see to it that all that public health science offers is secured for our community.

Money appropriated is not enough; it must be wisely disbursed. Actual materials play a minor part in health control. The important item of expense is not bricks or cement or textbooks, but brains. Knowledge, vicarious knowledge, if you will, sets us free. Even when we have provided the money and secured efficient personnel, the task is not done. Our governmental agents, especially those in public health, need the stimulation that comes from appreciation. They want not acclaim but the moral support of an understanding public.

*Prophets of health keep up a steady din. They promote systems of exercise, diet and mental hygiene. But there is no formula that will insure health.*

Closely related to this principle of protecting health through joint governmental action is that of lending support to nonofficial health endeavors. Not bound by law or precedent, voluntary health associations experiment and explore, in the hope that measures tested and proved will be willingly adopted by the taxpayer as part of the official health program. Without this pioneering work of nonofficial agencies, their encouragement and their watchfulness, most health departments would soon grow stale, and some do indeed degenerate into mere political footballs.

### *An Individual Problem*

The limit of the protection that can be afforded by public health measures is, however, soon reached. Health departments may make the environment healthful, keep epidemics out, guarantee the purity of water and food, teach the public, but there are yet many responsibilities that the individual himself must bear. Each person's problem of health is an individual one. The patent medicine that cured my neighbor of rheumatism will probably not cure mine. No rule of thumb, not even a voluminous family doctor book full of them, may be relied upon when sickness comes. To cast one's burdens of sickness on the doctor comes very near to being a workable, practical formula.

The store of available medical knowledge is now so vast that the best mind in the world cannot encompass it. But the scientific doctor holds the key to the storehouse. If he is not able himself to find precisely what is needed for an individual case, he calls on a colleague who specializes in a circumscribed section of the storehouse. Yet, while the store is great, it is by no means exhaustive. The wisest physician is limited, as is every mere mortal, by the bounds of undiscovered truth. He does not work miracles, there is no legerdemain in his diagnostic methods and he cannot read the secrets of the future. His only advantage is that he has explored the storehouse of accumulated medical knowledge, and this experience he gladly retails to those who need it.

From being merely the mender of damaged goods, the doctor is slowly evolving into a personal health counselor. And since eternal

vigilance is the price of health, his supervision should never cease. That is not to advocate that we should be ever conscious of our bodies —introspection may be worse than actual disease—but that the family doctor should be regarded as the monitor, the watchman, the engineer, whose task is never done and whose potential service and supervision never cease.

Of late, the practice of having a periodic health examination has been gaining vogue. Good! Provided that this, too, does not become a mere formula. The danger is that the busy person may set aside a certain date for the annual overhauling and completely dismiss the subject from his mind the other 364 days of the year. Using the storehouse to keep well and to increase one's health capital is the present ideal of medical practice.

A third tenet in the modern creed of health is that every one should become acquainted with the raw materials out of which pragmatical knowledge is made. It may be necessary for most of us to follow, more or less blindly, the dictums of our health teachers, but how much better if we are able to understand the reasons why. Some would contend that, if the man on the street is informed of the exact number of stars in the firmament, he should be willing to believe it like a dutiful child, while, if warned of a freshly painted fence, he has the inalienable right to doubt it and make an investigation.

### *Between Astronomy and Wet Paint*

But somewhere between astronomy and wet paint there is a middle ground. Certainly we should teach in our schools, not more health jingles and rules, but more fundamental knowledge about the body, eugenics, bacteriology, sanitation and the principles of healthful living. Personal questions of health arise every day. Is it true, as citrus growers recently broadcast, that lemon juice cures flu? A high school boy should be able to answer rationally. Can the lungs be "ventilated" by deep-breathing exercises? Elementary knowledge about respiration is enough to decide. Will a milk diet cure syphilis? Ask the college lad in Bacteriology A.

Widespread fundamental knowledge of hygiene is necessary, too, to insure public health progress. The enlightened health officer may propose a new life-saving measure, but unless the people understand and approve, his labor is seriously discounted. Smallpox, for example, is a disease that can be abolished hide and hair by the simple practice of universal vaccination. How is it, then, that some of the most enlightened communities (without getting geographically personal) have the highest smallpox rates? It is not because the people are hopeless morons—indeed, their educational attainments average high—but, as nearly every one knows, fundamental facts about medicine were not taught the present adult generation; that particular compartment of education was sadly neglected. And their prejudices are fed by men learned in general human knowledge but lacking in the specific.

Elbert Hubbard cursed the absurdity of trying to keep a child well by injecting into it the pus of a sick calf. Like most smart epigrams, this has the ring of truth, but how utterly false its spirit is! The student of general science, who has mastered the elementary principles of immunology, quickly puts his finger on Hubbard's error and sees nothing but absurdity in his clever manipulation of words.

### *Ignorance Blocks Progress*

Dogma is static; science marches on. But the march of its benefits may be effectively blocked by a public that does not understand. Without vision the people perish. Let the health officer propose an innovation, something apparently in conflict with the science of yesteryear, and immediately his leadership is resisted.

Some twenty years ago, a New England health officer was daring enough to abolish fumigation following a contagious disease, on the ground that it was burning of incense on the altar of ignorance. Protests abounded, but he prevailed, and no catastrophe followed. Other health officers followed his example, but their telephones are still kept hot by anxious taxpayers who demand fumigation.

This is but a feeble example to illustrate the point that unlearning is more difficult than learning when that learning consists merely of memorizing formulas and not in the ability to draw conclusions from sound premises. How can the public adjust itself to newer ideas unless it is able to reason for itself? And how can it reason intelligently on matters of public or personal health unless the basic foundation of knowledge is well laid?

Alas for the lazy minds and the Mussolinis of public health! There is no dogma, "ism," cult, formula or set of rules that points the sure way to health. But take courage; for this very reason, we shall progress. A living science reexamines itself constantly, readjusts itself, moves and grows. When it solidifies into a formula, the end of its usefulness is at hand.

# Making Use of SCIENCE in

*A clean, crisp table cloth is always sanitary, for the modern laundry uses a powerful disinfectant, scalding water and starch. However, a cloth with the day's menu outlined on its surface is a fine resting place for bacteria.*

*Photo Courtesy American Restaurant Magazine*

By, Bernard Behrend

# Restaurant Inspection

SCIENCE has learned not to depend alone upon the observations of the unintentionally deceptive human eye. It is only the argus eye of the microscope that detects those micro-organisms that may be termed our "invisible foes." Therefore scientific knowledge of today, taking nothing for granted, bases all conclusions on experimental research.

Among 66,000 men in the United States Army, 80 per cent of the cases of respiratory diseases were traced to insanitary methods of washing the mess kits. Among 21,000 civilians, 84 per cent of respiratory diseases occurred among those eating from dishes washed by hand. Statistics have also shown that 92 per cent of deaths from communicable diseases occur from organisms entering the mouth. Thus we realize the significance of cleanliness in home kitchens, restaurants, hotels and other eating places.

Unfortunately this phase of uncleanliness is not brought to the attention of the public until an epidemic spreads through the community. During the World War, Surgeon General Cumming of the United States Public Health Service while studying the influenza epidemic discovered that the individual washing of mess kits by soldiers was more harmful than when this was done in the main kitchen. In the old "line method" of the army, the soldiers first passed the common washing receptacle, supposedly washed their mess kits and then passed on to dry them with a towel used in common by all. By this method they not only contaminated their utensils but further polluted the usually tepid dish water with organisms from their mouths and hands. The evil of the common drying cloth was also a source of contamination.

Restaurant sanitation is subject to the same problems as the army camp. Therefore a study of restaurant conditions was undertaken to determine the practicability of a bacteriologic examination as an index of restaurant sanitation. The presence of a great number of organisms in the dish water, on cups, plates and silverware does not necessarily indicate the presence of disease forms, but implies pollution, and pollution signifies the possible presence of pathogenic organisms.

High bacterial counts in the dish water are frequently encountered because of the fact that

a temperature below from 115 to 125 F. is not always effective in killing the organisms in such a brief interval as is usually employed in dish washing. A temperature of 145 F. for a period of thirty minutes is necessary to kill the majority of disease forms. In order to destroy the bacteria that are not removed from dishes and silverware by the usual washing process, disinfectants and liberal quantities of soap or soap powder mixed in water as hot as the hand can endure should be used. Certain disinfectants have odors disagreeable to housewives and proprietors of restaurants. However, small quantities of reliable disinfectants, such as chlorine or chlorine compounds are effective, and no objectionable odor is perceptible. Dish water should be changed frequently and should be kept hot.

These rules are applicable to the home as well as to all other kitchens. Adequate temperature and disinfectants will prevent the transmission of potentially dangerous groups of disease-producing organisms, such as those of pneumonia, colds, tuberculosis, Vincent's angina (trench mouth) and pus producing bacteria, which might easily occur in hit-or-miss methods.

### *The Old Method of Inspection*

Alluring titles, crystal fronts, or low lights and soft music in a restaurant do not imply a spotless, sanitarily controlled kitchen, nor can we, from gross inspection, see within the glass of water or upon the dish or silverware the "invisible foe." As a rule, in our large cities, the restaurants are periodically visited by food or health inspectors who check the cleanliness of the dispensers of food. The inspector uses the score card method, whereby he indicates on a card various outward conditions in the restaurant and kitchen, such as clean floors, windows, employees, broken glassware and garbage disposal. This method of the inspector gives absolutely no basis for determining the cleanliness of the eating establishment, as visual observations may be deceptive.

### *The Bacteriologic Method*

The bacteriologic method used in the work reported here is thorough and is feasible on a large scale, because it is compact, simple to manipulate and inexpensive. The outfit used consists of a box approximately 8 inches square with compartments to accommodate conveniently eight series of test tubes (eight tubes to a series). The bacteriologist uses swabs immersed in sterile bouillon tubes (fig. 1) with which he swabs off a definite portion of a knife, fork, spoon, cup, plate, tumbler and table top. The eighth tube is used to collect a sample of dish water. At the time of the collection, the temperature of the dish water is noted.

These samples are taken to the laboratory, and within two hours are "plated out" in agar-agar and incubated for twenty-four hours. They are then examined for bacterial growth, and if no growth has appeared, they are held for an additional twenty-four hours. The bacterial colonies as they may appear are shown in figures 2, 3 and 4. The utensils cultures from which give a count of from 1 to 10 colonies are classed as excellent, from 11 to 30 good, from 31 to 50 fair, from 51 to 100 poor and more than 100 bad. The examination of sixty kitchens ranging from hospital diet kitchens to restaurants, hotels, schools, department store restaurants and drug stores proved the pro-

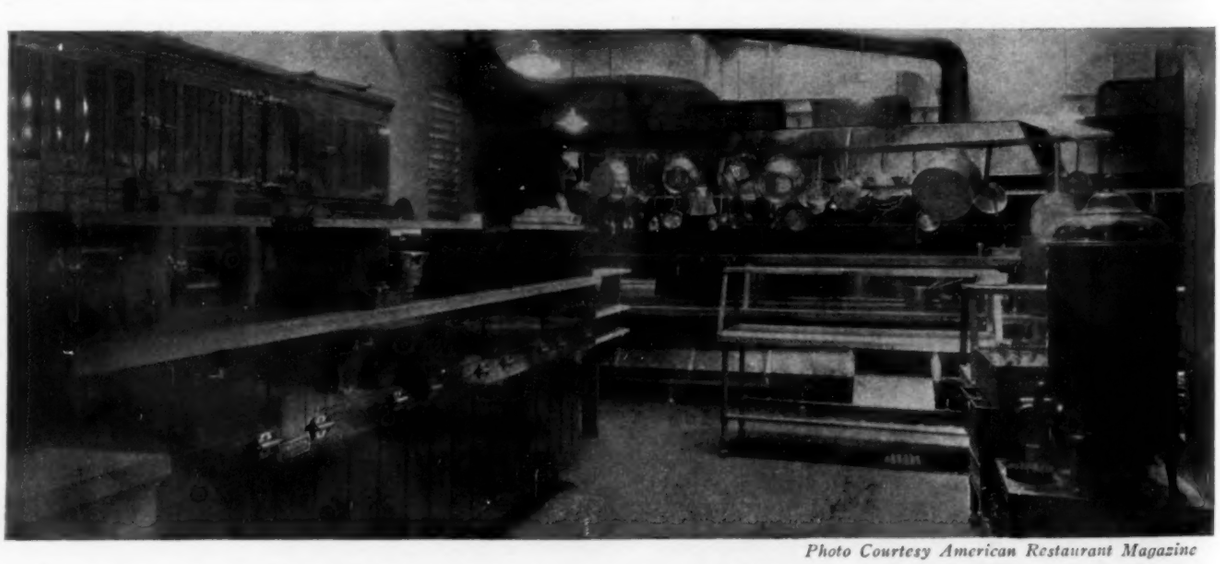
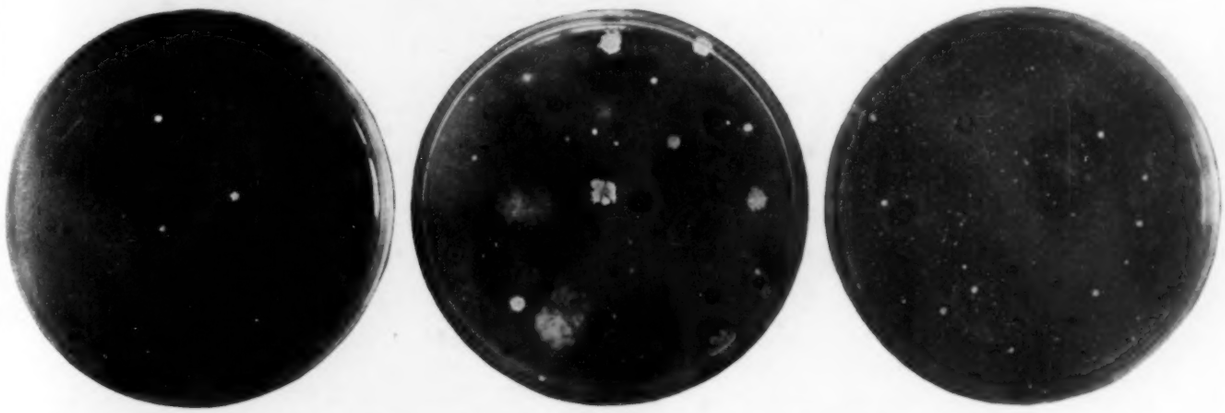


*Photo Courtesy American Restaurant Magazine*

***The kitchen of the Hollywood Pig 'n' Whistle. Outward conditions alone do not indicate sanitation, and the old score card method of restaurant inspection will soon become obsolete.***



*Three cultures taken from plates in different restaurants. On the left the low bacterial count shows a high standard of sanitation; the middle count is fair and the third count indicates careless and unsafe operation.*

cedure to be a satisfactory and workable one. A similar method has been adopted by the health department of Dayton, Ohio, where it has also proved efficient.

In case of an epidemic, the bacteriologist could undertake a study of the identification of the isolated organisms by observing their morphologic and cultural characteristics. Routinely this procedure is not essential, the primary object being quantitative, since numbers are indicative of pollution, and pollution signifies insanitary conditions.

A bacterial count of between 100 and 500 colonies in one cubic centimeter of dish water indicates slipshod, uncontrolled practices, such as the use of dirty, insufficiently heated water and a lack of soap powder or disinfectant. The average temperature range of the dish water used in the establishments investigated was from 75 to 125 F. and sometimes a temperature as low as 40 F. was found. If rules of temperature control are rigidly complied with in the use of the modern dish washing machine, the results will be 100 per cent efficient, and the dishes and silverware will come out sterile. A high bacterial count on utensils may be attributable to washing the dishes too hastily, quick turnover during rush hours, improper washing solutions, soiled drying towels, or bad handling during drying. The cleanliness of the hands and nails of the washers and driers, of the dish cloths, brushes and towels used must be stressed.

Table top sanitation is of interest. Hands, sleeves, gloves, packages coming in contact with the table cover, sneezing and coughing all serve as sources of bacterial contamination. Whether these bacteria are harmful or not, they should be destroyed. The method commonly employed in cleaning table tops, where table cloths are not used, is hurriedly to pass a damp towel over the surface. Such a practice tends to make conditions worse by spreading the bacteria from one table to another. Table tops should be washed, using hot water and disinfectants, if possible, after each diner leaves, and then should be dried with a clean towel.

Periodic routine medical examination, including Wassermann, typhoid and tuberculosis tests should be made on all those employed in public eating establishments, to avoid bacterial contamination within the restaurants.

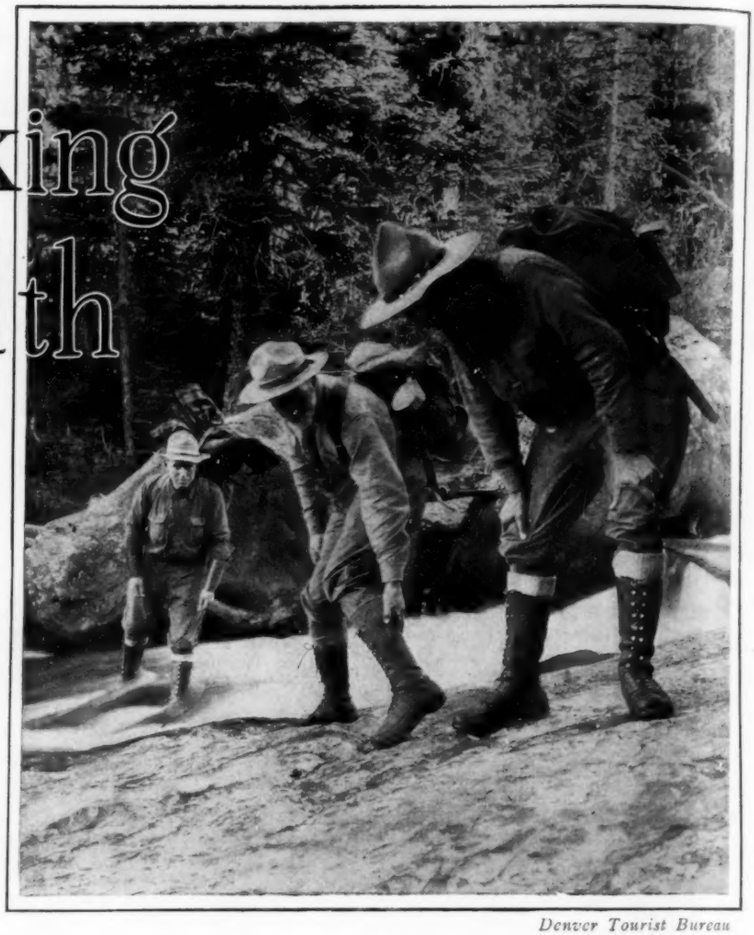
The modern restaurant and kitchen should be large, well ventilated and well lighted, for when a restaurant feeds five or six thousand persons daily, the employees cannot be expected to work under adverse conditions. Employees should wear clean uniforms every day, and these should be supplied by the company. Lavatory facilities and washrooms for patrons and employees should be kept clean.

Fastidious or critical guests do not patronize a restaurant if it appears dirty. The proprietor must either learn to observe the common rules of cleanliness or must be "quarantined" until he complies with the regulations of the health authorities. Moreover, there is no reason why owners unable to purchase modern, expensive equipment cannot maintain the standards of cleanliness by rigid supervision.

By laboratory control such as has been outlined, the personal element and danger of collusion between inspector and the manager or owner is largely eliminated. The city health inspector familiar with bacteriologic technic may take cultures and thus check up on eating establishments. Scientific inspection is the only basis of ascertaining restaurant sanitation. Dayton, Ohio, is now using a bacteriologic method, while in New York City the method is in an experimental stage. Every progressive community should have a well equipped bacteriologic laboratory, not alone for restaurant sanitation, but for whatever contingency may arise in the cause of public health and hygiene.

# Knapsacking for Health

By
Claude P. Fordyce



*Wading clothes are often desirable on a mountain hike, and of this equipment the moccasin pac is of primary importance.*

*Denver Tourist Bureau*

FROM a health standpoint there is no exercise that surpasses walking. It brings in play all the muscles, especially those of the abdomen, which need development; it speeds up elimination of waste products, it takes one out into the fresh air and sunshine and is easily within the scope of any one's daily activities.

It is advisable to take at least a 2 mile walk outdoors every day, and if you cannot do this during the sunlight do it after supper. Then on week ends and holidays or on the annual vacation longer walks may be taken into the wilderness near home, or in connection with vacation motor tours one may hit the trails into a real wilderness with much the same spirit with which an explorer ventures forth boldly, blazing his own trail.

### *Into the Real Wilderness*

Tramping over improved trails through the mountainous region of Yosemite National Park I have found to be an ideal outing. It can now be made with the assurance of a good night's rest at the six handy high Sierra camps, where one can throw aside his bedroll for the night, sleep on a mattress and get meals as good as one enjoys at home. A San Francisco high school student, Thomas Johnson, covered 500 miles in this high region in twenty-seven days, and on this extensive tramp through the heart of the Sierras climbs were made to the towering heights of Mounts Dana, Ritter, Gibbs, Conness and the Lyell Glacier.

Indeed some of the best features of Yosemite's 1,140 square miles lies in the high country outside of Yosemite Valley, which occupies but one eighth of the total park area.

### *The High Sierra Camps*

The Yosemite High Sierra Camps are a chain of resorts in regions abounding in fishing streams and lakes, located at strategic scenic centers about 10 miles apart and providing comfortable lodging and plain but ample meals. These accommodations eliminate the necessity for the hiker to tote on his back shelter, bed and commissary. All he needs is a camera and films, fishing outfit and lunch carried in a small rucksack.

Trips into this high country will put you apart from the crowds on the valley floor, and it is a practical way to see the highest and most beautiful parts of the Sierra Nevadas. It is worth while to take just the circuit tour of the camps, but if you want to do a little independent exploring there are scores of day trips out from each camp.

If you drive your car into Yosemite Valley, you can safely leave it at one of the camp colonies or hotels and strike out afoot. Little Yosemite camp is 6.5 miles from the valley near the north wall of Little Yosemite Valley and a short distance above Nevada Falls. The trail winds up past Happy Isles to the foot of Vernal Falls. This camp is a rendezvous for hikers wishing to scale Half Dome or Clouds' Rest. You can go afoot up Mist Trail or take the longer trail to Nevada Falls. Within a day's walk of little Yosemite Valley is Merced Lake Camp, or you can go over the Forsythe Pass Trail to Tenaya Lake Camp or over the Sunrise Trail to Tuolumne Meadows Camp.

### *Fine Fishing Region*

Merced Lake Camp features a most spectacular view of Yosemite National Park, hot showers for the tired and dusty traveler, fishing in Merced and Washburn lakes and ascents to Mounts Florence, Clark and other peaks.

Booth Lake Camp is 10,000 feet above San Francisco tide water and is reached via Babcock Lake trail. It offers fine fishing and is a region rich in domes and remarkable trees, in cascading streams, green meadows and tiny lakes.

Tuolumne Meadows is the hub of a number of trails that lead in every direction, every trail rich in scenery. The Sierra Club has its headquarters camp there. The selection of the region by this famous mountaineering organization attests to its recreational opportunities. At the lower end of Toulumne Meadows are found the Natural Soda Springs and near them is a store at which travelers may buy food, clothing and fishing supplies. The most popular trip, however, is the hike down the trail that winds along the turbulent Tuolumne River, which plunges down the steep and smooth granite slope and strikes pockets that force the water into the air forming complete revolutions. These water wheels are best in early summer. Back tracking to Glen Aulin, you take a south trail to Tenaya Lake Camp.

Tenaya Lake is near the Tioga Road, a region replete with fine side trips and good fishing. You can now go to Yosemite Valley proper, 13 miles via Snow Creek Trail with entrancing views of Half Dome, Mount Watkins and Basket Dome, or you can go via Tioga Road along Yosemite Creek to the top of Yosemite Falls and down the fine trail to Yosemite Lodge.

### *Via Shank's Mare*

The high Sierra Camps embody a premier vacation for the motorist who comes to Yosemite Valley and then hits the trail afoot into more sequestered territory. In fact there are opportunities for off-the-motorway trips afoot in all regions of California. Parking your car and hitting the trail via Shank's Mare is becoming the popular adjunct to the complete vaca-

*A little independent bit of exploring in the high country.*

*Good fishing grounds in the Flathead National Forest, Montana.*

tion. There are hundreds of trails scouted by the Sierra Club of San Francisco, and this organization will cooperate with you in planning your outing.

The dyed-in-the-wool hiker gets his keenest enjoyment in trailing the wilderness with outfit carried on his back complete with shelter, bed and commissary. To my notion, autumn is the ideal time for hiking tours. The air has a zest that is especially invigorating, it is generally not too hot to walk steadily during the day, and a good camp fire at nights, before one turns into fluffy wool blankets, is thoroughly enjoyed.

### *Packing the Kit*

The hiking kit for trips into the wilderness should be held down to that irreducible minimum consistent with comfort. It is best for at least two persons to go together and share the tent. Have a tent of balloon silk or a shelter cloth that can be rigged up as a lean-to covering the bed. If the weather is cold, you can get heat from a fire built in front and reflected down upon the bed.

You can make a simple and efficient sleeping bag for yourself by folding over the long way a wool-batt comforter and sewing it across one end and three-fourths the way up the side. Provision must be made for some sort of a mattress. A good plan is to take a cloth bag the same size as the sleeping bag and when ready to make camp fill it with leaves, pine needles, hay, straw or whatever browse is handy. The mess kit preferred is the boy scout aluminum nesting or the army type. The rucksack will carry the pack satisfactorily.

The following food list for a man for four days has proved adequate for my use over many seasons of hard travel on the trail:

Breadstuff: loaf of rye bread, 1 pound; wheat flour, 2 pounds; cornmeal, ½ pound; baking powder, ¼ pound. Total, 3¾ pounds.

Meat ration: bacon, ½ pound; ham, ½ pound; dried beef chipped, ½ pound; tinned butter, ½ pound (boil it at home, skim off the top and pack in tin with pry-up lid); cheese, ¼ pound. Total, 2¼ pounds.

Vegetable ration: rice, ½ pound; soup powder, ¼ pound; dehydrated potatoes, ¼ pound; dried onions (small amount); cereal (3 minute oats), ¼ pound. Total, 1¼ pounds.

Fruit component: seedless raisins, ½ pound; dried figs and apricots, ½ pound. Total, 1 pound.

Miscellaneous rations: sugar cubes, ½ pound; salt, 2 ounces; powdered milk, ¼ pound; tea tablets or cocoa or chocolate, ¼ pound; chocolate almond bars, ½ pound. Total, 1⅝ pounds.

Containers for the foregoing are paraffined balloon silk bags and tins with pry-up lids. Total, ¼ pound.

Grand total, 10⅛ pounds.

The use of the balloon silk items and the dehydrated foods is important in keeping the weight and bulk down to a minimum. Probably the greatest boon to light-weight outfitting was the advent of the fabric called balloon silk. This is not silk at all but a closely woven Egyptian cotton fabric weighing 3½ ounces to the yard and, if waterproofed, 5½ ounces to the yard. Being of close weave, it sheds water well and stands hard wear, but to render it com-

pletely proof against rot, mildew and water it is best to process it. This material can be handled in the ordinary home sewing machine. You can waterproof it with paraffin, as follows: into a gallon mason jar full of gasoline, shave a pound of parowax or household paraffin. Set this in the sun or in a tub of hot water (never near a flame) until melted and then spread the solution on the fabric and hang or stretch it outdoors. The gasoline evaporates, leaving all the fibers coated with the wax. The material should first be made into the various camp articles and then waterproofed.

On a long walk, start with a pace of two miles an hour and do not overdo. In equipping for knapsack tours, get your shoes at least a size larger than your street shoes, because the feet swell surprisingly on a long walk. If planning a long hike, get out every day for a month before and walk several miles in the footwear you will use on the trip, to break in your shoes properly and to train your muscles for walking.

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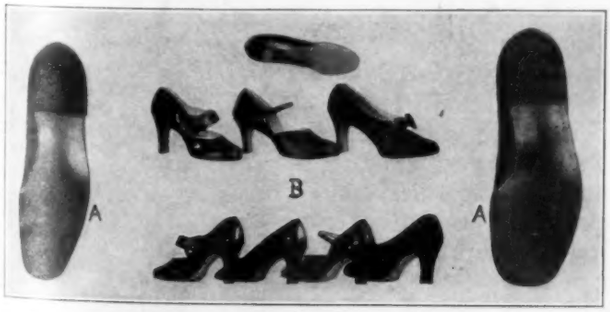
# Model Shoe Is Described

WOMEN wear shoes that are too short; men wear shoes that do not conform to the shape of their feet. Shoes are most commonly constructed with the idea of creating beauty rather than support; flexibility and resilience, the two factors that maintain the efficiency of the foot, are not fully considered. For this reason foot trouble is becoming an ever increasing issue, Dr. Alfred J. Buka says in *The Journal* of the American Medical Association.

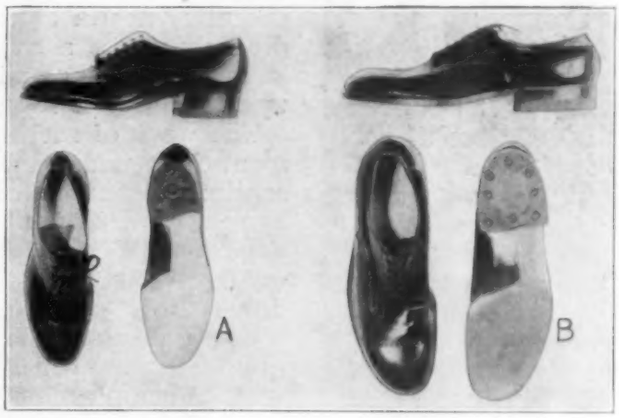
What sort of shoes, then, will incorporate neatness, be attractive and still maintain the needed qualifications? Dr. Buka describes the features that distinguish a model shoe.

The semiround or medium box toe shoe is recommended by Dr. Buka. The Blucher type of upper is best for supporting the longitudinal arch. An extra long counter, as the stiff portion of the shoes is called, extending almost to the great toe joint also helps to adjust the shoe tightly around the instep. Another point is the close fitting of the heel by tapering up the stiff portion of the shoe, making it a size narrower at the top.

The arch of the model shoe is built in of a flexible and resilient steel, cushioned against rubber. The inner line of the arch is higher than the outside, thus conforming with the natural anatomic line of the foot, Dr. Buka explains.




*Types of shoes considered incorrect for preservation of good feet: A, A, men's shoes; B, women's shoes.*



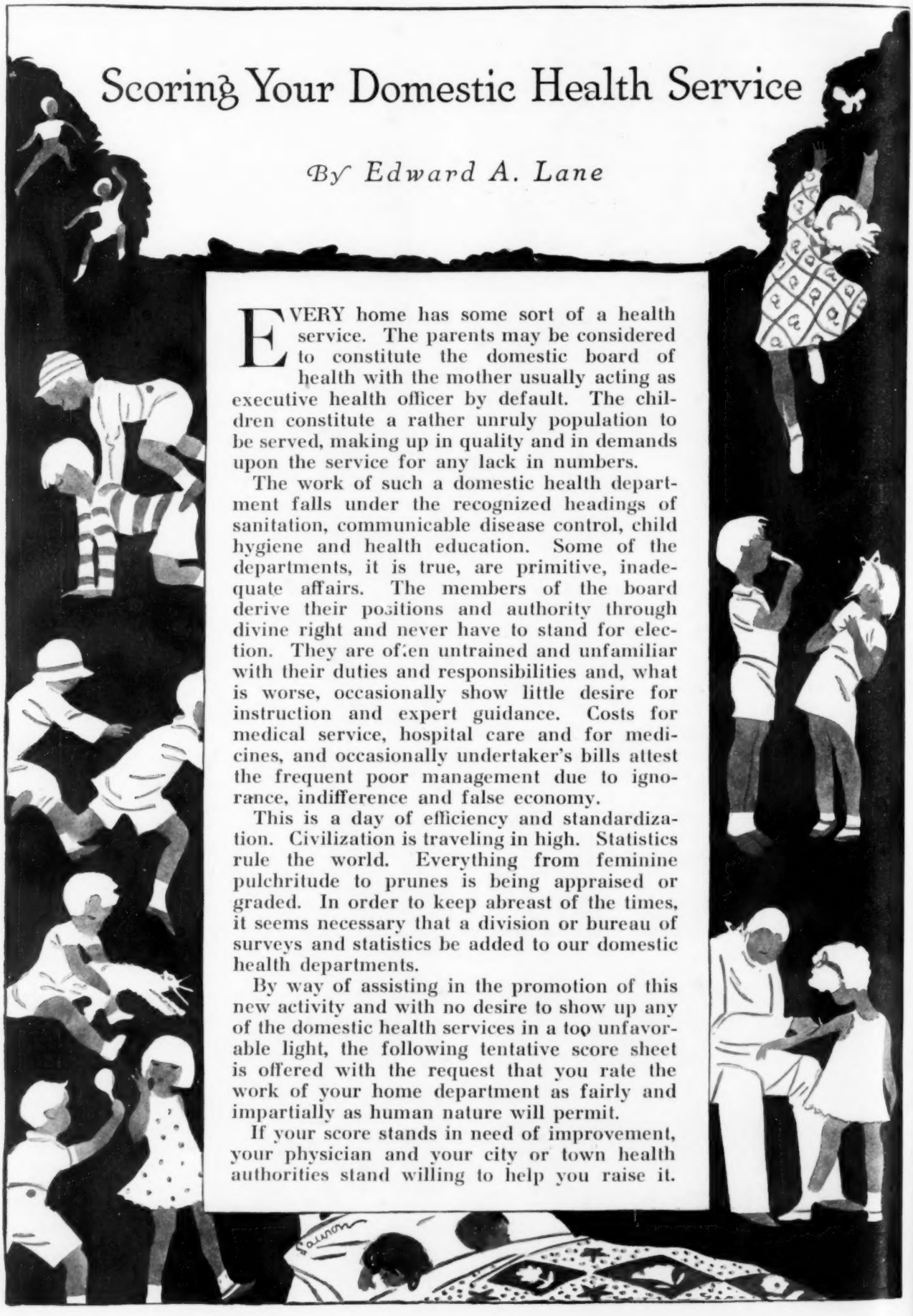

*Types of shoes considered correct for preservation of good feet: A, woman's shoe; B, man's shoe.*

Another feature incorporated in the model shoe is the extension sole, which flares out beyond the usual amount on the outer side. This is to support the increased width of the foot when the weight is borne on it. The ideal heel is the broad rubber over leather type. In the case of the woman's shoe, the heel should be from 1¼ to 1¾ inches high; in the man's from 1 to 1⅜ inches. Dr. Buka advises that in measuring a foot for shoes an allowance of from 1½ to 2½ sizes larger than the actual measurement should be made to take care of the increased width during weight-bearing.

The foot should rest in the properly fitted shoe with the feeling that there is support under the longitudinal arch and a binding feeling with comfort and support around the upper of the shoe over the instep. These features should be found as well in the rest of the shoe. The heel should fit so that the upper part of the counter will grip about the heel firmly yet comfortably. The shape of the shoe conforms in general with the form of the foot, the inside line being almost straight, while the outside is a modified swing.

# Scoring Your Domestic Health Service

*By Edward A. Lane*



EVERY home has some sort of a health service. The parents may be considered to constitute the domestic board of health with the mother usually acting as executive health officer by default. The children constitute a rather unruly population to be served, making up in quality and in demands upon the service for any lack in numbers.

The work of such a domestic health department falls under the recognized headings of sanitation, communicable disease control, child hygiene and health education. Some of the departments, it is true, are primitive, inadequate affairs. The members of the board derive their positions and authority through divine right and never have to stand for election. They are often untrained and unfamiliar with their duties and responsibilities and, what is worse, occasionally show little desire for instruction and expert guidance. Costs for medical service, hospital care and for medicines, and occasionally undertaker's bills attest the frequent poor management due to ignorance, indifference and false economy.

This is a day of efficiency and standardization. Civilization is traveling in high. Statistics rule the world. Everything from feminine pulchritude to prunes is being appraised or graded. In order to keep abreast of the times, it seems necessary that a division or bureau of surveys and statistics be added to our domestic health departments.

By way of assisting in the promotion of this new activity and with no desire to show up any of the domestic health services in a too unfavorable light, the following tentative score sheet is offered with the request that you rate the work of your home department as fairly and impartially as human nature will permit.

If your score stands in need of improvement, your physician and your city or town health authorities stand willing to help you raise it.

# *How Does Your Home Rate?*

| | Value of Items | Points Scored |
|---|---|---|
| **Sanitation** | | |
| Is the temperature of the living quarters kept between 65 and 70 F. during the winter? (This presupposes at least one thermometer in the house.) | 2 | |
| Are all rooms aired and as far as possible sunned each day? | 2 | |
| Is the drinking water supply of good sanitary quality as shown by laboratory examination of water samples? (If connected with a public water supply, take full credit; the only approved domestic source of supply is a properly located and constructed well.) | 5 | |
| Are the toilet facilities adequate? (If connected with a public sewer, take full credit; if disposal is domestic, the method used should comply with the standards of and be approved by the local health authorities.) | 5 | |
| Is the milk used of good sanitary quality? (For credit it must be pasteurized or of "certified" grade in the city; either pasteurized or from tuberculosis-free cows in the country.) | 4 | |
| Is the house effectively screened against flies and mosquitoes in summer? | 2 | |
| **Communicable Disease Control** | | |
| Were all children vaccinated against smallpox by one year of age? (If not, but is being done at once, take half credit.) | 6 | |
| Have all the children been either Schick tested and found to be immune to diphtheria or immunized with toxin-antitoxin against diphtheria? | 6 | |
| Has the family drinking glass or cup been abolished? | 2 | |
| Has the family towel, either roller or otherwise, been replaced by individual towels? | 2 | |
| Are the hands always washed before eating? | 3 | |
| Is the common use of handkerchiefs, lollipops, harmonicas, etc., prohibited? | 2 | |
| Is a child with a beginning "cold" or ill defined febrile illness isolated as far as possible from the other children until the cause of the illness is ascertained? | 3 | |
| Is a physician called promptly to diagnose and prescribe for all cases of illness among the children? | 6 | |
| **Child Hygiene** | | |
| Have the children all been thoroughly examined by a physician for physical defects? | 4 | |
| Have all remediable defects been corrected? | 10 | |
| Do the children visit a physician at least once a year for a general health examination? | 4 | |
| Are they taken to a dentist at least once a year for prophylactic attention? | 3 | |
| Do they get an adequate amount of sleep using the following table as a minimum: | 3 | |
| 1- 2 years ..... 13 hours | | |
| 2- 4 years ..... 12 hours | | |
| 4- 6 years ..... 11 hours | | |
| 6-10 years ..... 10 hours | | |
| 10-14 years ..... 9 hours | | |
| Do they play outdoors a part of each day unless prevented by inclement weather? | 1 | |
| Do they have a cleansing bath at least once a week in winter and oftener in summer? | 2 | |
| Do they take at least three glasses of milk a day? | 3 | |
| Is some kind of fruit and a leafy vegetable included in the children's diet each day? | 3 | |
| Are the teeth brushed regularly at least every night before retiring? | 2 | |
| **Health Education** | | |
| Beginning about the fifth or sixth year, have the children been given periodic elementary instruction in the fundamentals of the dissemination of communicable disease? | 4 | |
| Beginning about the eighth or ninth year, have simple instructions and demonstrations in first aid been given the children? | 3 | |
| Have the children been instructed from time to time in the prevention of accidents of various kinds, special attention being paid to the automobile hazard? | 3 | |
| Does the domestic board of health subscribe to HYGEIA? | 5 | |
| **Total** | 100 | |

# How UNDESIRABLE IMMIGRANTS

IN MOST European ports medical officers of the U. S. Public Health Service attached to the United States consulates give a thorough physical and mental examination to every alien wishing to enter the United States. Before the United States consul puts his seal, or visé, on the passport of the alien, the alien must have passed this examination as well as the examination given by the United States immigration authorities as to his financial and moral status.

The examination given by the U. S. Public Health Service is a most thorough one. The alien is stripped; the heart, lungs, limbs, eyes, ears, nose, throat and skin are examined, and if an indication arises, x-ray, urine and blood examinations are also made.

The results of the examination are certified to the immigration authorities and if the alien has a defect that is excludable he is not allowed to embark.

When the alien arrives in the United States, he is again examined by the medical and immigration officers. The second medical examination is not as rigid as the first one because the examining medical officer has before him the results of the first examination. It often happens, however, that the alien has developed a disease during the voyage that was not apparent at the time of embarkation. Recently there arrived in the port of New York from Central Europe a group of fourteen immigrants who

had an acute inflammation of the eyes which was not present when they embarked and which after long observation at the Ellis Island Hospital proved to be trachoma. It is probable that when these aliens embarked, they had already been affected but not enough time had elapsed for the disease to manifest itself. Medically speaking, the disease was in the stage of incubation. All were deported.

The United States immigration laws provide in Section 16 that the general medical examination of an arriving alien shall be made by at least two officers of the Public Health Service, who have had not less than two years' experience in the practice of their profession since securing the degree of doctor of medicine, and that mental examinations shall be conducted by physicians especially skilled in psychiatry. The regulations under which these medical examinations are to be made are prepared by the Surgeon General of the U. S. Public Health Service.

The diseases and defects for which aliens are certified are divided into three classes. Under class A come mental defectives, loathsome contagious diseases and dangerous contagious diseases. These are mandatorily excludable.

Under class B are all diseases and physical defects that will materially impair capacity for self-maintenance, such as heart disease, hernia, marked defective vision and deformities. Immigrants certified as having class B defects may be admitted at the discretion of the immigration authorities, either under bond or even without.

Under class C are included such minor defects as cross eyes, flat feet, bow legs and scars. These conditions do not usually debar an alien.

If the defect of a person wishing to enter the United States is certified as insanity or a mental defect, he is entitled to an appeal and thereby

receives opportunity to present additional evidence before a board of three medical officers that he is not afflicted with the conditions certified.

If the condition for which he is certified is other than mental defect or insanity, he may also be reexamined on request.

In cases in which medical examiners certify a person as suffering from one of the diseases

# Are Discovered — By Louis Schwartz

grouped as "loathsome contagious" or "dangerous contagious," the organism causing the disease is usually demonstrated under the microscope. Trachoma is an exception to this because the causative organism has not been officially recognized.

On this account the certificate of trachoma is often appealed from. The alien's lawyer succeeds in obtaining some physician to contest the diagnosis of the original examiner or even of the medical board of appeal. It is a well known fact that physicians and so-called experts can always be found, who, for a consideration, will testify for either side of a case.

In these cases habeas corpus proceedings may be instituted to prevent deportation, and cases are frequently taken before the United States courts. It sometimes happens that interested influential people bring so much pressure to bear that an undesirable alien is landed. However, in a vast majority of instances the court sustains the decision of the immigration authorities.

The diagnoses most often appealed from and those most often fought in the courts are those of cases of feeblemindedness, mental defects and insanity.

The mental examinations are conducted by specialists who have had proper training and who, by long contact with immigrants, have become familiar with the normal reactions of the various classes and races. They know that the standard of normality for illiterates and near-illiterates in certain countries is lower than that of persons from other countries in which the economic conditions are better and in which universal education is the rule. They recognize the fact that mental defectives of a high grade, who have had certain environmental and educational advantages, are able to do some of the intelligence tests that are entirely beyond the powers of many mentally normal but illiterate aliens.

Whenever a person presents any abnormality either in his physiognomy, conduct or in his answers to questions in the preliminary examinations, he is intensively examined for mental defects or diseases. It may be necessary to make this examination through an interpreter, and interpreters with special training are required. An interpreter must translate exactly the questions and answers; he must not ask any questions of his own, and neither must he hold any conversation with the alien that is not authorized by the examiner.

When inexperienced interpreters are used, undesirable instances like the following often occur: An examiner asking a Chinese through an interpreter, "Are you very strong," the interpreter, after an extremely long conversation with the alien, none of which is intelligible to the doctor, is interrupted by the doctor and asked, "What are you talking about and what is he saying?" and the interpreter says, "He says yes."

In all persons suspected of being feebleminded a family history is taken and in this connection it is remembered that parents, relatives and friends are loath to admit degeneracy in the family and are prone to conceal inferiorities and to exaggerate abilities. In spite of this, facts elicited in the history often point the way to the diagnosis; such facts as convulsions in childhood, delayed development, inability to keep up in school, marked perversity of conduct, or that the alien is the only illiterate one in a large family, are significant.

The candidate for entrance is then given a complete examination, which includes a survey for the so-called stigmas of degeneration. While these stigmas are common among idiots and imbeciles, they are often absent in high-

grade defectives. Some of these stigmas are peculiarities in the formation of the skull, the features or the limbs or in the relation of their size to each other. The face may show markedly pointed cheek bones, receding forehead or retracted chin. The examination of the mouth may show a high-vaulted V-shaped or cleft palate. The ears may be abnormal in size or shape. The shape of the eyes may be of the kind occurring in other races. The presence of one of these so-called stigmas does not in itself mean anything, but the presence of two or more in a person of apparently dull mentality may suggest the way to a correct diagnosis.

The mental examination of young children is more difficult, especially if they are apparently physically normal. In such children the behavior must be observed, and signs of abnormal restlessness, abnormal listlessness or vicious conduct often help to determine the diagnosis. Many children under 5 years of age cannot be mentally classified unless they are subjected to long periods of observation. In questioning parents about children, the examiners must expect them to be loath to exhibit feebleminded or retarded children, and when a large family comes in for examination it has been found a usual thing for the normal members of the family to keep the feebleminded one in the background and have some other member answer the questions addressed to him. Parents often excuse this by saying that the child is bashful and indeed they are loath to admit, even to themselves that he is defective.

### *Examine All Children Individually*

For this reason each member of a large family is examined alone when mental deficiency is suspected. As is generally known, there are certain standards of mental development for children at different ages. A child of 3 years should be able to show the nose, eyes, mouth; he should be able to repeat two digits, give his name and recognize familiar objects in a picture. At 4 years he should give his sex and should be able to name common articles with which he is familiar. However, in children a great deal of dependence is placed on the history and physical signs rather than on mental tests.

In the mental examination of adults suspected of feeblemindedness, data are first obtained concerning the amount of knowledge acquired in everyday contacts. This is under the assumption that a normal person will retain a certain amount of information concerning the ordinary affairs of life. Thus, the farmer's boy ought to know the seasons for sowing and reaping of crops; the amount of yield from an acre; the quantity of milk a cow ordinarily gives; how long it takes a chicken's eggs to hatch, and the process of making butter. It would be unreasonable to expect a city boy to know these things.

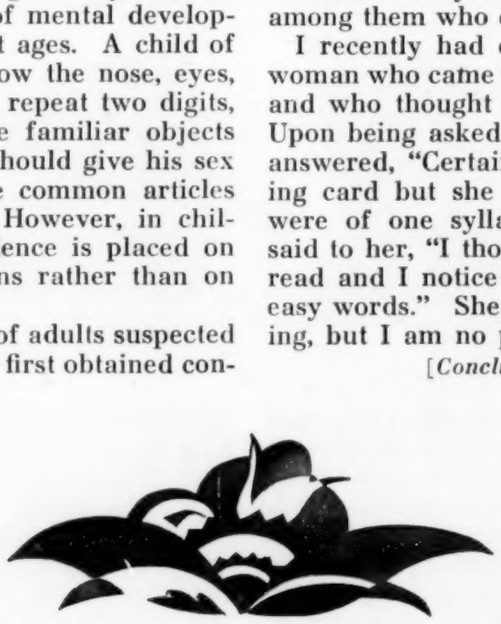
There are also many facts of common knowledge even among the most uneducated. For instance, the name of the ruler and capital of the native country; date and significance of the great religious festivals like Christmas and Easter; the value of coins and paper money in their own country, and the ability to make change for ordinary purposes.

### *Examiner Considers Environment*

The trained medical examiner of immigrants, however, always bears in mind the kind of community and environment from which the immigrant came, and knows about what can be expected from the normal inhabitants. What are likely to be considered matters of universal information may be absolutely unknown to peasants who have led a life of sordidness and hard-working monotony in an isolated village in which there is no school. Some of these peasants who are of normal mentality do not know the names of the days of the week. Sunday to them is only a ringing of the church bells. They do not know what year it is, and they may not know the names of what are to us ordinary articles of furniture and wearing apparel, because they have never seen or heard of them. They may regard as educated those among them who can sign their names.

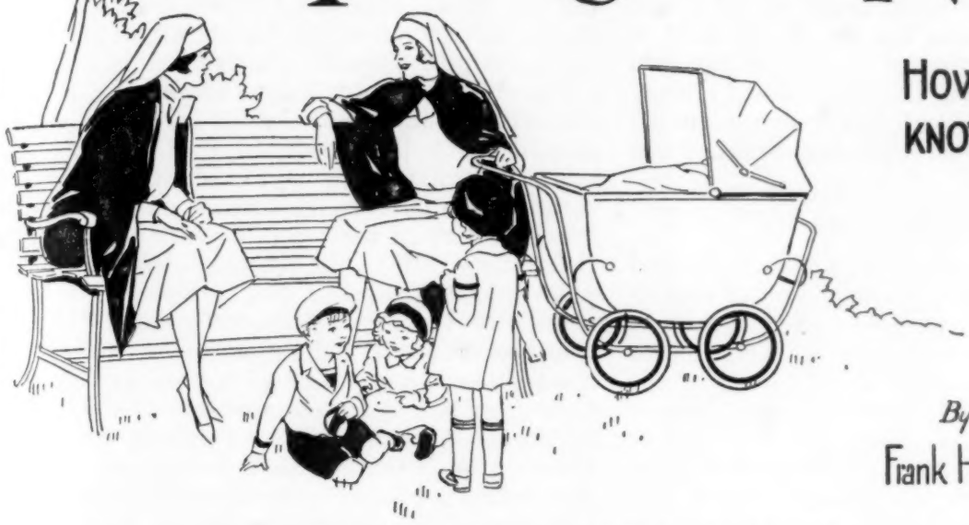
I recently had occasion to examine one old woman who came from a small village in Russia and who thought herself to be quite a savant. Upon being asked whether she could read, she answered, "Certainly." She was given a reading card but she read only those words that were of one syllable, skipping the others. I said to her, "I thought you said that you could read and I notice that you read only the very easy words." She answered, "Well, I am reading, but I am no professor."

[*Concluded in next issue.*]



# Your Child's Nurse

## HOW MUCH DO YOU KNOW ABOUT HER?



*By*
Frank Howard Richardson

*The topics some nurses discuss in the presence of their charges would disturb the complaisance of many a mother who prides herself on her "paragon of a nurse."*

AS THE infant advances toward the runabout age, the mother is faced with a problem most important in its influence on his future. Is there to be a nurse, or shall the mother continue to be the constant companion and director of the growing child?

With some parents this question is apparently answered even before it is asked, because their financial status is such that they cannot consider the possibility of engaging a nurse. This answer, however, is more apparent than real; for whether or not she is definitely engaged, there is always some one who will at times relieve the mother and so actually is the nurse. This some one may be the grandmother or an older brother or sister; or it may be an easy-going neighbor with a child of her own, who tolerates and perhaps even welcomes the coming of another child to play with hers.

Why should we consider the matter of the child's nurse? Is it really of so much importance, at this early stage, who it is that is with the child for the greater part of his day? Does it matter much, provided only that he is fed adequately, kept in the open air as much as the weather permits, is reasonably clean, and is restrained from running risks of physical danger?

A little thought will convince us that it is far more important than most persons think. Take the matter of health and disease, for example. How many of us ever give serious thought to the health of those to whom we entrust the care of our children? Some of us have advanced so far along the road of elementary health knowledge that we hesitate to allow any one with a bad cold to come near them; but even this is frequently permitted for fear that we may hurt the oversensitive feelings of the person so afflicted. What is of far greater import, however, is the state of health of the person to whom children are entrusted, as regards the presence of diseases far more serious than even that very serious affair, the common cold.

Tuberculosis is a disease easily transmitted to the young child. Its presence in a nurse may not even be suspected; yet her constant close association with a baby or runabout child may spell tragedy, as a result of the easy transmissibility of infection. The venereal diseases are prevalent and are passed from one person to another with hideous ease.

Any one who thinks that this is merely a hypothetical situation may well read what Dr. Charles Hendee Smith of Bellevue Hospital, New York, has to say about cases he has treated in the best homes, where virulent infections have been transmitted from servants to the children of the house. In certain parts of the country, the servant class is recruited largely from a race in which the figures show both venereal disease and tuberculosis to be unusu-

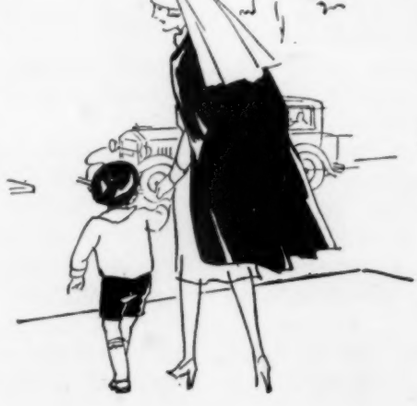
ally high; yet it has been rare for me to find, after years of practice among the best families in these sections, any thought whatsoever given to this vital question.

Of course it is not fair not to mention the possibility of disease transmission by others than servants. The favorite uncle, the volunteer nurse from the family next door, the temporary caretaker or the member of the family who has most to do with the child—any of these may likewise be a source of infection. But the nurse to whom the runabout child is turned over for many hours of most of the days is the one whose health should be most closely scrutinized, because of the greater opportunities she possesses for transmitting any disease from which she may suffer.

### *The Nurse's Moral Status*

If it is necessary to investigate the physical status of the nurse, of how much more importance is it to know something of her morals. Yet this is even more difficult to learn. One mother who took her child daily to one of the city parks in a fashionable neighborhood allowed herself to be taken for her child's nurse by the nurses who came there with their little charges. Her report of the topics that they discussed, often in the presence of the children whose welfare they were supposed to be looking after, would disturb the complaisance of many a mother who prides herself on her "paragon of a nurse." The child, we are assured, patterns his life and his ideals in accordance with the life and ideals of the elder with whom he is most constantly associated. If that person is a young woman whose morals are bad, the father and mother who reap what they have sown can hardly complain when the harvest is ready for reaping.

It would not be fair, of course, to dwell only on the dark side of the picture. It is undoubtedly true—sad as it may be to have to admit it—that many a nurse makes a far safer guide and model for the child that she attends than would the mother who turns the child over to her. The oldtime Southern mammy—still to be seen occasionally, bless her beautiful old soul—was able to instil something into her charges that more up-to-date and better instructed folk may well envy. The type of nurse to whom Robert Louis Stevenson dedicated his Child's Garden of Verses—the Alison Cunningham, "my second Mother, my first Wife," who "for long nights lay awake and watched for my unworthy sake"—is not so rare but that many a man today can thank the fortune that gave him such a kindly and loving foster mother.



### *Needs Training in Child Management*

The nurse to whom the child is to be entrusted during these precious, impressionable years should have some training certainly in the hows, the whys and the wherefores of child management. She should learn something of the important subject of habit formation. She should learn the importance of answering a child's questions no matter how trivial and inconsequential they may seem; and she should know that upon the way in which she answers them may hinge the future attitude of the youngster toward life and its problems. She should be instructed how to react toward his questions regarding the mysteries of life, for if she spends as much time with him as many full-time nurses do, the chances are that she will be the one to whom he first turns for enlightenment on such matters as the origin of life and the relationship between himself and other children of the opposite sex.

These things are touched upon here, not for the purpose of giving definite instruction to parents or to nurses on how to meet specific problems, but rather with the idea of impressing upon them the importance of these formative years in the life of the child and the necessity of giving due thought to their management. Many parents seem to think that it matters not what happens during these early years, so long as the physical wants of their children are supplied adequately. It behooves those of us who are dealing more intimately with such parents to sound a note of warning, in order that they may not feel that they are fulfilling their whole obligation when they make provision for these physical needs. If we want the new generation to be better than the old—and some of us are pessimistic enough to admit without argument that there is room for improvement—then we must take conscious thought of what we are doing for our children, and take such thought in time for them to have a more productive and profitable runabout age.

# Food Fallacies

By Laura McLaughlin

*Interest in getting a foamy mass was so great that we did not gorge ourselves on cucumbers. Overeating, not poison, was the danger.*

IT HAS taken only a few years for all of us to reach a state in which we hurry too much. Much of this mad traffic problem is due to the worry of getting food in front of us and of disposing of it before getting at something else.

Some attempts to enforce leisurely eating habits have been made. Not many years ago there was a fad for chewing each bite of food a long time; Horace Fletcher's prescription said thirty-two times before swallowing. If you haven't tried it, do. It is fun for one meal. Literal following of Fletcherism we know to be a fallacy; such a long admixing with saliva is unnecessary and there is enough rhythmic motion in the normal digestive tract to take care of food that is normally well torn apart. However, if Fletcher had more influence on some breakfast tables, digestive disturbances might be less frequent. Perhaps some one was working toward the same end in advocating the chewing of gum for twenty minutes after meals or in advising persons to stand for fifteen minutes after eating as an aid to digestion—both wholly unnecessary procedures. The one advantage these ideas have in common is the avoidance of hurry and scurry and of loss of temper.

### *Drawing Out the Poison*

There are other cases in which marking time has served a good end. I remember, when I was 7 years old, of my going over to a small friend's house. We sat down in front of a basket of cucumbers convinced that if we satisfied our desire by eating those poisonous cucumbers we would be sick. Then we had a happy thought. We had heard that if one cut the large end off a cucumber and rubbed the cut ends together until they foamed, the poison could be drawn out. Interest in getting a large foamy mass was so great that we did not gorge ourselves on cucumbers.

Some persons believe that cucumbers need special preparation to draw out the poison. They slice the cucumbers and soak them in salt water, a procedure that changes the flavor but certainly gives no better product than the original cucumbers, peeled or even unpeeled. I suspect that eating green apples with salt had the same origin and is a fallacy unless it means that John and Sue must go home for salt and thus time intervenes before John takes a bite and Sue a chew. It is overeating that leads to unhappy results.

Other persons hesitate to serve eggplant on the grounds that it requires so much time to prepare. They think it must first be pared, sliced and allowed to stand a couple of hours under a heavy weight so that the poison will ooze out before it is fried. Yet eggplant stuffed and baked in the oven is delicious. Surely if it is good baked whole it would be just as nutritious if cooked in slices without squeezing, just as are potatoes, apples or onions.

### *Bananas Come into Their Own*

In the past few years a number of food prejudices have been overcome. Bananas used to be thought indigestible; now it is agreed that ripe bananas are good food for everybody. The physiology text I studied in the ninth grade

taught me that fruit was gold in the morning, silver at noon, and lead at night. Now, no one hesitates about serving a fruit salad at the evening meal.

The same textbook said that cheese is in itself indigestible but that it aids in the digestion of other foods. I suppose that the last clause was to justify its time-honored use with apple pie. Now cheese has a respected place in our diet along with other dairy products.

A century ago, people had to learn to like tomatoes; later they were taken as medicine to thin the blood; now they are among the most universally liked of vegetables and their juice is among the first foods added to a baby's milk diet.

Bananas and tomatoes have had to work their way up, but perhaps the reputations of a few vegetables whose food values have always been known have been overworked to their detriment. My father used to call carrots "Lillian Russells." Lillian Russell, writing for the women's column in the daily newspaper, advocated eating carrots for beauty and a clear skin. There is no fallacy about this if we let carrots stand for all vegetables with their fibrous, indigestible residue and their content of minerals to counteract the acids formed from meat and white bread in the diet. The woman who started the story that vegetables are beautifiers had a better basis, though the same appeal, than the person who said that the bread crusts will make the hair curly.

*Every morning after breakfast during February and March, we all filed into the pantry for our dose of sulphur and molasses.*

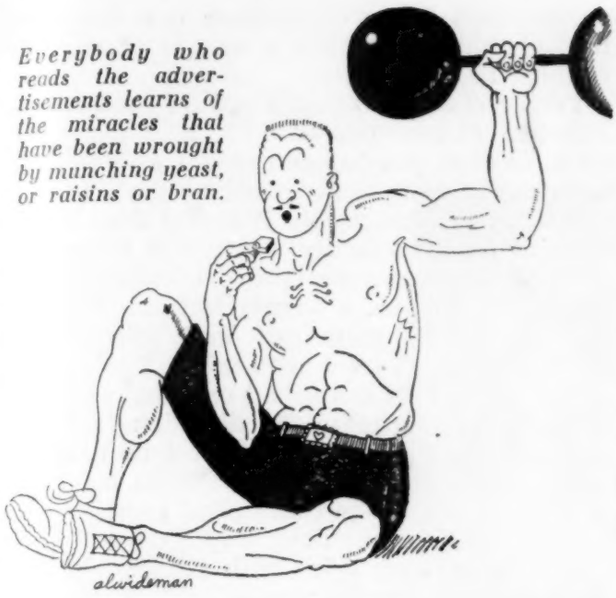
As carrots typify all vegetables because the most common, so spinach should stand for all greens. In a nursery school in which different greens were being fed—kale, mustard greens, broccoli—each time some child would say, "What's this, teacher? Spinach?" Three-year-old Tommy's mother has taught him much; says he, "Spinach is good for you; it's got vitamins." This is the right idea, for, among all the vegetables we know, perhaps spinach stands first in vitamins and minerals; the fallacy is in thinking spinach itself must be served frequently. Spinach should mean just what it does to the nursery school children—any form of greens. It is possible to secure dozens of greens, frequently fresh, sometimes canned, so that any normal palate will be appealed to by one or more. Then one may say, "You will like this!" Nothing will force a food into a garbage can as quickly as will saying "Eat this; it's good for you."

Speaking of canned vegetables, another fallacy is called to my attention almost any time I am home for a week or more. Our family is small; we cannot use a whole can of peas, corn or peaches at one meal. I have attempted to put part back into the refrigerator in its original container but I am never successful. I am told that the food will be poisoned. The danger of tin poisoning from the can is negligible; no case has ever been proved. Likewise, there is no danger in eating acid foods like tomatoes that have been heated in aluminum vessels. Because the tomatoes brighten the aluminum or because you see dark spots on aluminum pans in which spinach has stood over night, you think trouble may ensue. But the small quantities of aluminum are quite harmless that are absorbed in the brief process of cooking vegetables in aluminum vessels.

There have been fallacies about individual foods. Celery and fish have both been advocated for brain workers, founded on the belief that because nerves and brains are high in phosphorus their cells may be more greatly benefited by these foods that are rich in phosphorus. It is now known that these cells have no greater chance at the phosphorus supply than have other cells of the body. All the cells of the body are supplied with the same blood.

Our ideas about how to provide for the body have changed. In northwestern Iowa twenty years ago, every morning after breakfast during February and March, we all filed into the pantry and took a big tablespoonful of sulphur and molasses to clear our blood. Chemists had previously told us that flowers of sulphur is not soluble and is not made soluble in the digestive tract, that we might better get our sulphur in some other form. But we are willing to try everything and twenty years ago there was a widespread belief in its efficacy. As for molasses, we know that it is a good food; we mix it with feeds for farm animals and for human beings we incorporate it with all its iron and lime in cookies or gingerbread to dilute its sickeningly sweet taste.

All of us have heard of having our iron today in the form of raisins. We need iron and raisins contain it. The quantity in any food




*Everybody who reads the advertisements learns of the miracles that have been wrought by munching yeast, or raisins or bran.*

varies as the water content changes, and since raisins are dried and contain little water we might expect them to be high in iron. However, weight for weight, they contain much less iron than does fresh spinach or meat. We can get much more iron from some other foods than we can from raisins. However, raisins have the advantage of a good advertising agent.

### *The Yeast Fad*

Many other food fallacies have started with persons who have something to sell. For many years, Dr. Joseph Goldberger, who until his death in January was with the U. S. Public Health Service, studied pellagra, a disease especially widespread in the South, in an effort to determine its cause. Theory followed theory and had to be given up as impractical. After the disease was proved to be noninfectious, there was a feeling that something was lacking in the diet. By adding one food or one isolated food ingredient after another, a few years ago Dr. Goldberger discovered what was lacking. Yeast, even yeast that had been heated to a much higher temperature than that necessary to kill the yeast cell, was said to be essential in the treatment of pellagra.

It was known also that yeast would often aid in the cure of that all too prevalent condition, constipation. The growers of yeast who could no longer use it with hops had a big talking point. High powered sales methods have been used and everybody who looks at advertisements reads of the miracles that have been wrought by yeast. When I was growing up in Omaha, we used to go to a park near home to hear the medicine men, as patent medicine venders were called, tell of their herbs, herbs that had been used by Indians along the Missouri River. The shows the medicine men put on took the place of the movies of the present day and Wild West antics sold many a bottle of medicine. Just so stories in advertisements are selling many cakes of yeast. We know that drugs should be prescribed by physicians but it is hard to get away from the patent medicine idea of a cure-all, one little package that will drive away all evils. It would be such a happy solution for all our troubles.

Dr. Goldberger added yeast to a diet that consisted largely of corn meal, molasses and salt pork, a diet wholly unlike that of the majority of American people who get the vitamins they need from milk, and vitamins and laxative roughage from fruits and vegetables. If we choose our diet correctly, get all the exercise and fresh air we need, there is little need for a drug. But if taken as a drug, the dosage of yeast should be known, as in the case of any other laxative.

Yeast propaganda has run along neck to neck with that for bran. Many otherwise thinking people have forgotten that emergency measures are not for ordinary usages. It is true that in refining our flours to make lovely white loaves of bread much of the food value both in minerals and in bulkiness has been lost and that, knowing this, we should return these valuable properties to our diet. But problems in ratio and proportion are too much for most of us and in having so many isolated materials there is danger of using too much roughage at a time. If our bodies are working normally we are not aware of them. Hence, it is people who can least stand excessive irritation to the delicate walls of the digestive tract who adopt drastic measures in repeated usage of cereal husks.

When we find that a little bit of something is good, we are far too likely to think that more is better and run to an extreme. Too much of one thing usually means too little of another. Following ordinary health rules, we can get all the fiber we need from whole cereal breads with about 2 pounds of fruits and vegetables a day. But the use of yeast and bran will pass as other advertised fads have passed.

### *Today's Theories Often Tomorrow's Fallacies*

Scientists have started the spread of some of our food fallacies. We learn by our mistakes and the accepted theories of one generation are the fallacies of the next. We used to add lime water to milk for babies. Now we know that cow's milk does not need this lime, for it is already richer in it than is breast milk, and, if anything, just the opposite of this alkali should be added. In fact, many pediatricians advocate the use of acidified milk.

Thirty or more years ago when appendicitis was beginning to be recognized it was thought that berry or grape seeds lodging in the appendix caused the disease, and berries and grapes

were tabu for children and many others. This theory is a fallacy.

Then there are vegetarians or groups that do not eat meat. Some persons have seemingly had good physiologic reasons for abstaining from meat. One of the tests for diagnosing nephritis, a kidney disease, is the appearance of albumin in the urine. Albumin is a protein. Physicians once said that if protein was being eliminated from the body it was evident less should be used, and as meat is a protein food its disuse was indicated. Now physicians are working on the theory that if the body is losing some of its protein, there should be a larger intake to replace what is lost. But whatever is indicated for persons with nephritis, rheumatism or high blood pressure, the average healthy individual needs much protein each day. It takes thought on the part of somebody if she is to provide that protein in a palatable, tasty form, especially if she is restricted to eggs, cheese, peas, beans and similar foods. It can be done, but because it takes imagination and skill there is greater likelihood of its not being done. For most persons the easy, safe way is to use vegetables to balance meat.

### *Fallacies in Reducing Diets*

Some fallacies are misinterpretations. To be efficient and to be beautiful some people must reduce. This means using up some of the body stores of fat; that is, eating less food than the body requires so that it will burn its own tissues for energy. Because the average diet contains more starch than any other food ingredient, persons wanting to reduce have been told to eliminate starchy foods from the diet.

One of my friends did this by never eating potatoes and by sending to New Jersey for a gluten bread to replace ordinary bread. Then she cut her gluten bread thin and spread it thick with butter, never thinking that the butter had more than twice the fattening power of the ordinary bread.

Another friend was told to eat only two slices of whole wheat bread a day. Thus her food supply was limited and minerals were provided. One day at our boarding house when we had lettuce sandwiches of white bread, this friend announced that she would have to go to the hotel for her meal because she was not allowed to eat white bread. Telling her that the lettuce or the celery that was on the table made her white bread the equivalent of the brown would have been of no avail. At any rate we decided that the long walk to the hotel was a reducing measure in itself.

The safest general rule to give for a reducing diet is to tell people not to eat between meals and always to get up from the meal while they still feel hungry. To the argument that overweight runs in families, some one has aptly replied that it is rather a case of good cooks running in families.

Prejudices exist against certain food combinations. Cranberries or other acid fruits and milk, or even peaches and cream, do not make a beautiful combination because the acid curdles the milk, but surely it makes little difference in its digestibility whether it is curdled fifteen minutes before or two minutes after it enters the stomach. One may feel safe at breakfast in eating grapefruit and following it immediately by cereal with milk. Perhaps [illegible] combination does not sound enticing, but th[illegible] is nothing harmful to the digestion in eating cucumbers and milk or fish and milk at the same meal. Any valid objection to lemonade and ice cream at the same meal must refer to quantity, for no one objects to the same foods served as a fancy brick with stripes of lemon ice and strawberry ice cream.

### *How Science Advances*

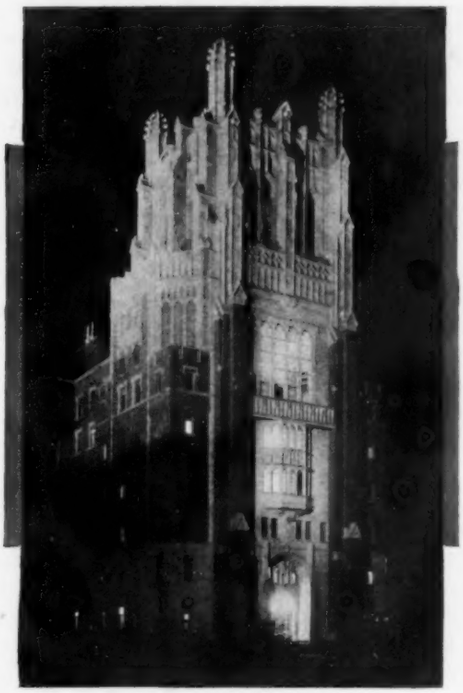
With the recognition of fallacies, science advances. Twenty-five years ago we had hopes of getting purified food substances so concentrated that men and women on long hikes might carry their food in tablet form. Efforts to make and test out such diets on rats brought the discovery of some of the vitamins.

Again, cod liver oil was known to be an effective medicine long before vitamins were known. Its fat was thought to be the active material. Efforts to purify this fatty oil and get rid of its obnoxious flavor showed that its effectiveness lay not in the fat but in the very impurities that gave it its characteristic flavor. Working with these impurities has brought recognition of the one vitamin that we can identify chemically, the one that cures rickets. This vitamin is presumably formed in our bodies by the action of sunlight. Winter sunshine at some hours of the day, especially when coming through glass, lacks the power of making the vitamin. But ultraviolet lamps are now widely advertised to give the stimulating rays. However, it is a fallacy to think that the public in general can as yet use such a lamp even if it can be made cheaply enough. Not enough is known about the dosage. Too much irridation would be much more deleterious than too much candy.

With time, fallacies disappear. For various reasons, there are always some faddists, some persons who just want to be different. Many eat too much, either spasmodically or by habit, and then lay digestive disturbances to a particular food. But we all think, sometimes. Now and then some one evolves a good theory, good in the sense of setting others to thinking. Then the old fallacious theory is disproved and we are ready for new ideas.

# Modern Care for the Sick

By N. P. Colwell



*Lighted tower of one of the group of university hospitals at the University of Iowa, typical of the great improvements made everywhere in the care of the sick.*

MOST of you are familiar with the tremendous improvements made in various lines of human activity during the last half century. Astronomers declare that more knowledge of the firmament has been obtained in the last fifty years than in all previous ages. The same has been said in regard to our knowledge of physics and chemistry. We all know of the vast changes resulting from the advent of the telephone, the building of cement roads and the development of the automobile. Even more spectacular has been the introduction of airplanes; and, to the public, the use of the radio has come about in the last ten years. Prior to the World War, how many ever dreamed that in a decade the people of an entire continent could listen at one time to an address by a presidential candidate!

### *Fifty Years of Progress*

Although not so spectacular, the discoveries in the field of medicine and the subsequent development of medical education, medical schools and hospitals, have been no less remarkable. Until about fifty years ago, it was a common belief that life was due to a spontaneous development. Then it was proved by scientific investigation that all life emanated from living beings, each creature reproducing others of its kind. Through scientific research, also, it was found that each of our common epidemic diseases is caused by a particular type of living germ or organism; that the germ causing each disease could be obtained from the patient and grown on gelatin or some other substance, and that a guinea-pig inoculated with the particular germ would develop the same disease as that from which the human patient was suffering. It was found also that the disease could be developed a second time by transferring germs from one guinea-pig to another and, in this way, a series of guinea-pigs having the disease could be developed at will. By a study of the germs causing different diseases, the scientists have also learned how these diseases may be cured or prevented. As living beings of each particular species reproduce others of the same kind, so also the germ that causes each type of disease will reproduce the same disease in other persons or animals.

As a result of this scientific research, most of the great epidemic diseases known to mankind have been almost exterminated. For example, the great epidemics of Asiatic cholera, bubonic plague and black diphtheria, which during the middle ages repeatedly swept through Europe destroying as high as from 15 to 20 per cent of the population, are now almost unknown. Diphtheria and smallpox, which formerly were responsible for so many deaths, are now well under control, although minor outbreaks occasionally occur when health measures are neglected.

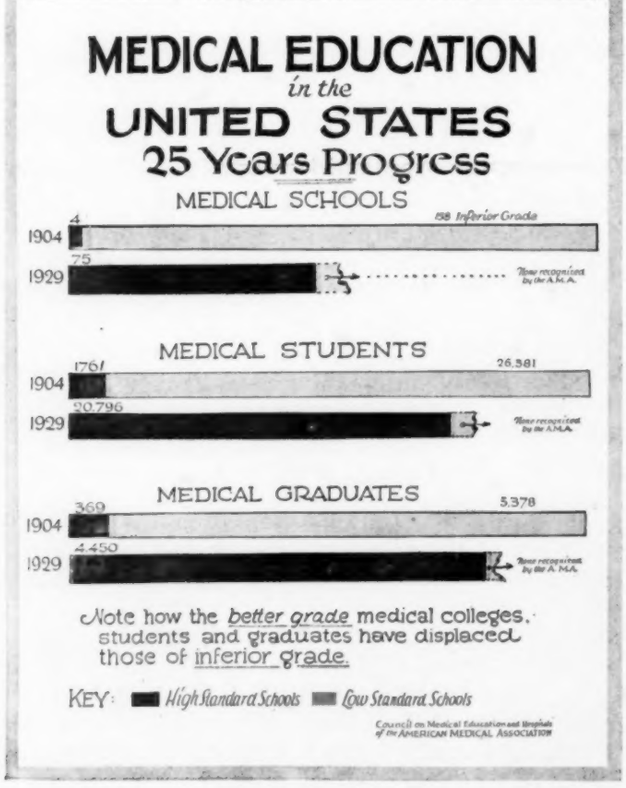
### *A Modern Miracle*

A study of the germ causing diphtheria resulted in the discovery of the antitoxin which has proved to be a specific cure for that disease and which comes nearest to being a miracle in modern medicine. In former times, for certain patients having diphtheria, the physician would say, "That patient cannot live till morning"; he now gives an injection of antitoxin and the morning usually finds a patient not only much alive but entirely out of danger.

Meanwhile, it has long been known that patients who recover from diphtheria are immune thereafter, as the antitoxin was created in the body in nature's own efforts to counteract the disease. In epidemics, however, the germ of diphtheria is usually so virulent, and its action so rapid, that nature cannot create the antitoxin fast enough to counteract the disease. Through the injection of antitoxin, artificially prepared, nature is reinforced and the lives of the patients —mostly children—are saved. The antitoxin is created by inoculating a healthy horse with a culture of diphtheria germs which have been weakened by heat. At intervals, inoculations with more virulent cultures are given until the horse's blood is thoroughly charged with the antitoxin. Then a quart of blood can be removed without causing the horse any particular discomfort and, by a special process, enough purified antitoxin is obtained to save the lives of a score or more of human beings.

### *Preventing Typhoid Fever*

Another equally miraculous result—a preventive measure rather than a cure—has come from the use of vaccine against typhoid fever. This disease was always the scourge of armies in time of war. Well within the memory of many persons is the havoc caused by typhoid fever among American soldiers in 1898 during the Spanish American War. At that time one soldier out of every seven contracted the disease and one out of every seventy-one died of it.




During the World War, however, all soldiers were vaccinated with the antityphoid vaccine. Although millions of soldiers were engaged under conditions most highly conducive to typhoid fever, only one soldier out of every 3,000 contracted typhoid fever and only one out of every 25,000 soldiers died from it. In other words, only one soldier in every three regiments contracted typhoid fever and only one out of each battalion of twenty-five regiments died of it. For the first time in history, during the World War, more deaths were caused by actual warfare than by disease.

### *Yellow Fever Conquered*

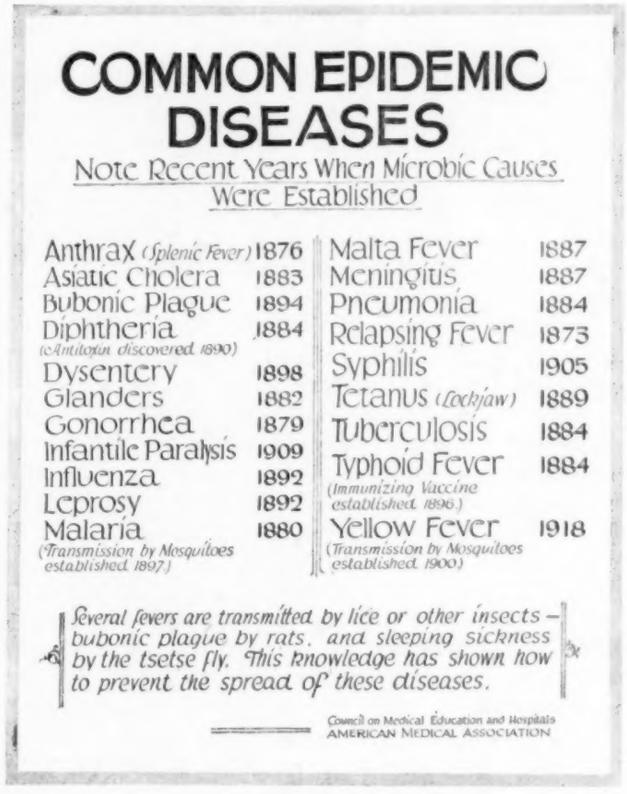
Another great victory over disease was won in 1900 when it was found that the germ causing yellow fever was conveyed from sick to well persons through the bite of a mosquito (*Aedes aegypti*). That the disease was so transferred was proved by four army surgeons who permitted themselves to be bitten by mosquitoes which had previously lighted on a yellow fever patient. One of these surgeons, Dr. Jesse W. Lazear, died a martyr in the war against disease. Two others, Walter Reed and James Carroll, recovered but were so broken in health that both died within a few years. Through this knowledge, yellow fever has since been almost obliterated by an organized warfare against the mosquitoes and by using screens to prevent them from biting either sick or well persons.

Through the victory thus won, cities in the southern part of the United States, Cuba and Central America, have been changed from pestholes of disease into safe places for human habitation. Through this victory also, engineers of the United States Army were enabled to construct the Panama Canal. Incidentally, it is now believed to have been yellow fever that exterminated the Maya people who lived ages ago in Central America and who, from recent excavations, are shown to have reached an unusually high degree of civilization.

The discovery of the germ origin of most of our common diseases has greatly increased our knowledge of medicine and revolutionized the methods of caring for the sick. Surgery, which formerly was seldom used except in emergencies, is now in everyday use. Through our present knowledge, we can minimize the danger of blood poisoning by keeping a wound free from germs, and operations that formerly were largely fatal can now be safely performed. Thousands of lives are now being saved by the removal of tumors which are obstructive or are sapping the patients' vitality. Blood transfusions, the use of serums and antitoxins, and other highly technical methods are now in common use. To insure a greater degree of safety, their use should be confined to hospitals in which infection can be prevented and in

which prompt action can be taken in emergencies.

Present-day methods of treatment are now more highly specialized and technical than formerly and safety demands greater knowledge and skill on the part of the physician. Under the proper conditions, present-day methods are of great value and will result in saving thousands of lives. The same methods may be highly dangerous, however, if they are attempted by ignorant, mercenary or improperly qualified practitioners. If a valuable watch is in need of repairs, its owner does not send it to a mechanic or a blacksmith but to a skilled watchmaker. How much more important it is that the highly complicated human machine, with its many and intricate vital processes, which are made even more sensitive in times of disease, be sent for repairs to a physician highly skilled in the use of modern methods of treatment! Physicians with such knowledge are now being trained in the medical schools connected with our well known and reputable universities. The medical training provided is similar to that which other leading countries of the world consider essential for the efficient care of sick or injured. How important it is, therefore, that laws regulating the healing art should be strictly enforced!


COMMON EPIDEMIC DISEASES
Note Recent Years When Microbic Causes Were Established
Anthrax (Splenic Fever) 1876
Asiatic Cholera 1883
Bubonic Plague 1894
Diphtheria 1884
(Antitoxin discovered 1890)
Dysentery 1898
Glanders 1882
Gonorrhea 1879
Infantile Paralysis 1909
Influenza 1892
Leprosy 1892
Malaria 1880
(Transmission by Mosquitoes established 1897)
Malta Fever 1887
Meningitis 1887
Pneumonia 1884
Relapsing Fever 1873
Syphilis 1905
Tetanus (Lockjaw) 1889
Tuberculosis 1884
Typhoid Fever 1884
(Immunizing Vaccine established 1896.)
Yellow Fever 1918
(Transmission by Mosquitoes established 1900)
Several fevers are transmitted by lice or other insects—bubonic plague by rats, and sleeping sickness by the tsetse fly. This knowledge has shown how to prevent the spread of these diseases.
Council on Medical Education and Hospitals
AMERICAN MEDICAL ASSOCIATION

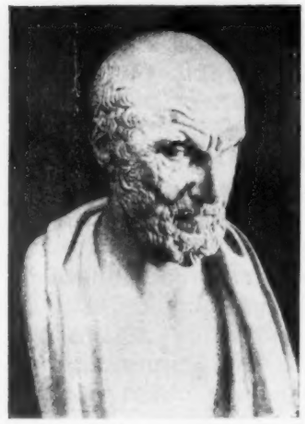
The knowledge of germs has also led to improved methods whereby disease can be prevented. The purification of drinking water and the improved methods of infant feeding coupled with the extinction of many of the more highly fatal diseases during the last half century have resulted in an increase in the average expectancy of human life in this country from forty to fifty-eight years. During the last fifty years, therefore, an average of eighteen years has been added to human life.

The increased medical knowledge resulting from the discovery of the germ origin of diseases made necessary a great improvement in our medical schools. The improvements in this country were more slowly adopted than in Europe but have been no less remarkable. Twenty-five years ago the United States had more than half the world's supply of medical schools, many of which did not compare favorably with those of other countries. Since then, however, these schools have been tremendously improved. Largely through the merging, in the larger cities, of from two to five medical schools into one better institution, the number of medical schools in this country has been reduced to seventy-five. We still have more medical schools than any three other countries combined, but the educational standards and equipment of these schools equal or surpass those of any other country.

The medical schools now have newer and larger buildings, more extensive and better equipped laboratories, and they are now connected with large dispensaries and hospitals.

Teachers now are not only better trained but the number in proportion to students has increased. The course of medical instruction now extends over four years of nine months each, and the curriculum is such as requires a better grade of students, so that now, in addition to the completion of a high school course, students before entering medical schools must have studied for two or more years in a college or university. Indeed, about 65 per cent of all students secure a complete course in a university and obtain a college degree before they obtain their medical diploma.

In this country, therefore, students with a better education enter better medical schools where they are taught by more expert teachers and where they have improved opportunities for clinical instruction. In addition to the medical course, the young graduates secure also one or more years of training as an intern in a hospital. Thus the physicians of today are in position to provide a better care for their patients. With the great improvements that have been made in the last fifty years, there is every reason to expect even more remarkable progress during the next half century.



*Hippocrates, Greek physician.*

*Auenbrugger first noted changes in the chest.*

*Corvisart verified the studies of Auenbrugger.*

*Bayle founded the modern pathology of tuberculosis.*

# Founders of Our Knowledge of TUBERCULOSIS

## By H. J. Corper

CONSUMPTION, or phthisis, more recently called tuberculosis as the world gradually unraveled some of the mysteries of one of man's worst plagues, is one of the earliest known and described diseases. It is mentioned in early writings and evidences of it are found in the remains of our prehistoric ancestors.

Whence it came and where it is going are difficult questions to answer. Those who are qualified to judge on the latter point stand in two opposed groups, the one optimistic and confident of the ability of man eventually to conquer this insidious enemy by using the weapons of science, and a smaller group pessimistic in expounding the view that this parasite will follow man to eternity. To the optimist, inspired by the many successes of the medical sciences in the conquest of disease, there looms upon the horizon a vision of the men whose confidence in ultimate success has enabled them to lay upon the altar of sacrifice the energy and effort responsible for the knowledge that guides us today in our contact with this undesirable invader, the tubercle bacillus.

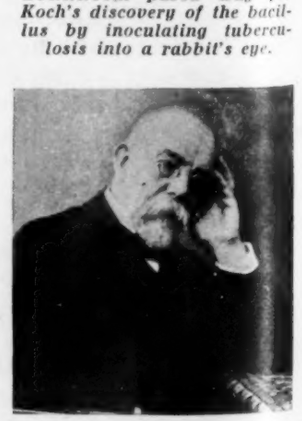
All our medical knowledge of ancient times centers around one Greek savant, Hippocrates (460-357 B. C.). Hippocrates was called the "father of medicine," because he used his mind and senses as diagnostic instruments instead of attributing disease to the gods as did his predecessors and contemporaries. Because many of Hippocrates' conceptions have stood the test of time, he is probably more cited than any one other physician. He gave a fairly good description of consumption and noticed that the disease usually started in winter, that it was protracted and that cough was a conspicuous symptom. He also noted that the disease most commonly occurs between the ages of 18 and 35 years. He recommended tar as a remedy, suggestive of the later creosote treatment.

There is a large gap in years between Hippocrates' time and the period when scientific medicine began to unravel the mysteries of

*Laennec invented the stethoscope and introduced the terminology of tuberculosis.*

*Villemin, with Klencke, demonstrated the infectious nature of tuberculosis.*

*Cohnheim paved way for Koch's discovery of the bacillus by inoculating tuberculosis into a rabbit's eye.*



*Koch discovered the tubercle bacillus and tuberculin.*

tuberculosis so that human beings could intelligently institute measures for preventing and treating this scourge. The disease was so prevalent among men that many names of physicians are associated with local manifestations, such as Pott's disease, but these are merely accidental associations and added little to the sum total of our knowledge concerning tuberculosis as it is viewed today.

In 1761, a noteworthy discovery was made by an honest, unassuming Austrian physician, Leopold Auenbrugger, who loved science for its own sake and was almost deprived of credit for his discovery of percussion for this reason. A French physician, Jean-Nicolas Corvisart, in 1808 unearthed Auenbrugger's original contribution, translated it into French and thus inspired two of his students to unfold some of the mysteries of tuberculosis by means of it. They introduced an additional new method, auscultation, and a new instrument, the stethoscope. These two methods have proved more valuable to the clinician in diagnosing diseases and in making possible clinical discoveries regarding disease than any others.

### *Auenbrugger Inspires Pupils*

Auenbrugger intensively studied the effects of disease upon the sounds within the chest when it was struck by the fingers or by special instruments devised for this purpose. His first proposition was that the chest of a healthy subject sounds, when struck, like a cloth-covered drum. Corvisart recognized the value of this discovery and stimulated his pupils Gaspard Bayle (1774-1816) and Réné Laennec (1781-1826), both of whom were consumptives themselves, to present to the world accurate scientific descriptions of the pathology of tuberculosis; these have served as a foundation for most of our present-day knowledge regarding this disease. These two men found that tuberculosis was not confined to the lungs, as was previously thought, but that it could involve any part of the body and that, regardless of location, its structure was essentially the same. To them pulmonary hemorrhage, or hemoptysis, was the result of tuberculosis and not the cause. Although Bayle believed tuberculosis incurable, Laennec was not so inclined.

Laennec, a slight, nervous, tolerant gentleman of unaffected nature and refined feelings, would rather serve a poor client than derive a large income for his services to nobility. Once while examining the chest of a stout young lady, Laennec remembered the phenomenon of the intensifying of sound and its communication along a rod when scratched at one end by children in play, and the question arose to him, "Why not apply this in the examination of the heart and lungs of the patient?" On his own lathe he turned out the monaural stethoscope (in 1815), which was the forerunner of the modern binaural stethoscope used and carried by every practicing physician today. Most of the modern terms describing the findings, both normal and those due to disease, in the chest were originated by Laennec.

Bayle died of consumption, or pulmonary tuberculosis, in 1816 at the age of 42 years and Laennec of the same disease in 1826 at the age of 45 years, both modest men to whom the world owes an everlasting debt of gratitude. Although tuberculosis by this time was accepted as a disease entity which was identical regardless of its location in the body, there was no unity of opinion as to its cause or its infectious nature. Laennec believed it infectious but his deductions were drawn mainly from what he had seen in man; conclusive proof was lacking and the majority of the physicians of his time scoffed at his idea.

In 1843, an Austrian physician by the name of Klencke, little known to the world, for the first time produced tuberculosis by injecting so-called tubercle cells into the veins of rabbits; these experiments were, however, unconvincing and open to question, although Klencke himself was convinced. His work was forgotten and had no influence upon the existing theories of tuberculosis until Jean Antoine Villemin, a French army surgeon, in 1865 at the famous Val de Grâce Military Medical School and Hospital of France repeated and elaborated on Klencke's experiments and proved that tuberculosis is a specific infection due to an invisible inoculable agent and transmissible by inoculation from man to lower animals.

### *Ideas Too Radical for the Time*

Such radical ideas presented before the advent of Pasteur and the discovery of microorganisms could gain no credence even though Villemin exerted all his efforts to spread the doctrine of contagious phthisis. In 1870, he told his aids at Val de Grâce Hospital that "the phthisical soldier is to his messmate what the glandered horse is to its yokefellow."

Villemin's experiments were even questioned until corroborated by Julius Cohnheim in 1877, when he successfully inoculated tuberculosis into the anterior chamber of the eye of the rabbit. Julius Cohnheim, a man of robust, cheerful, energetic disposition, swift and sure of speech, with great powers of wit and sarcasm not only paved the way for the discovery of the tubercle bacillus by Robert Koch but when Koch needed encouragement it was the botanist Cohn and Cohnheim, the pathologist, who were confident of his findings.

When Robert Koch, in 1882, demonstrated the tubercle bacillus in tuberculous tissues, grew it on culture mediums and infected animals with these cultures, Pasteur exclaimed "C'est un

*Smith differentiated between human and bovine bacilli.*

*Virchow described the cellular pathology of tuberculosis.*

*Ehrlich produced the first practical stain for bacilli.*

*Bodington was founder of the open air treatment.*

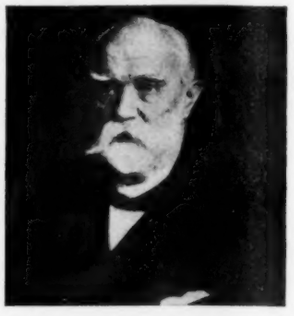
grand progrès." In appearance, Koch was a typical savant of the Prussian type; in character, he was dignified, modest and fair minded, one of the greatest men that Germany has ever produced. Among his many other contributions to the science of medicine, Koch, in 1890, described tuberculin, a material that has proved of distinct value as a diagnostic agent in certain cases of tuberculosis.

To an American professor at Harvard University, Theobald Smith, belongs the credit of a signal discovery which was at the foundation of our modern methods of pasteurizing milk to protect children against bovine tuberculosis. In 1898, he differentiated the tubercle bacilli causing tuberculosis in cattle from those causing the disease in man, and this differentiation stands unshaken today, so that these two disease-producing types are acknowledged as the human tubercle bacillus and the bovine tubercle bacillus. In recognition of his investigations in tuberculosis, he received the first Trudeau medal given by the National Tuberculosis Association.

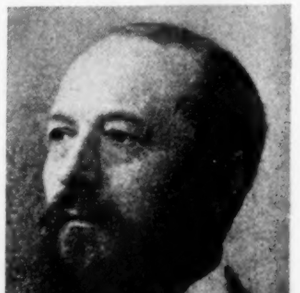
There are two scientists whose work in other fields of the medical sciences far overshadow their accomplishments in tuberculosis but whose work in this field merits their mention here. Rudolf Virchow (1821-1902) of Berlin, the foremost cellular pathologist the world has produced, described in minute detail the cellular pathology of tuberculosis so that few changes have been made to date, and Paul Ehrlich (1854-1915), better known for his discovery of the salvarsans for the treatment of syphilis, in 1882, while an assistant in Koch's Institute, produced the first successful and practical stain for tubercle bacilli, thus making this method available to every practicing physician as a part of his armamentarium.

After the infectious nature of tuberculosis was accepted and the tubercle bacillus had been discovered by Koch the scientific world naturally became excited about instituting methods of preventing the spread of this plague and wild theories were advanced until George Cornet, an assistant to Robert Koch, demonstrated that the dust from rooms inhabited by consumptives could infect animals. It was a short step to the conception that this inhaled dust containing living bacilli would be retained in the lungs and there set up pulmonary tuberculosis; thus was born the dust-infection theory of the aerogenic route for consumption. This seemed ample for all practical purposes until Carl Fluegge (1847-1919) demonstrated that in dried dust the bacilli are usually dead or so attenuated that they will not infect man. On the basis of elaborate experimental studies Fluegge demonstrated that it was the moist droplets expelled by the consumptive during talking, coughing and sneezing that carried the

*Cornet demonstrated the danger of dust infection.*



*Fluegge demonstrated the moist droplet infection.*



*Behring demonstrated the intestinal route of infection and declared that adult tuberculosis is the result of infection in childhood.*

*Dettweiler established the first free sanatorium in the world.*

danger to the well man and thus was born the moist droplet infection theory of the aerogenic route for pulmonary tuberculosis. Then developed the theory by Emil von Behring (1854-1917) "that all tuberculosis in the adult is the result of childhood infection" and with it was propounded the intestinal route of infection, which seemed logical at a time when tubercle bacilli had been found in the milk of cattle and the bovine and human bacilli had not been differentiated by Theobald Smith.

Today these theories all have exerted a beneficial effect upon the welfare of mankind in that they have opened our eyes to the ubiquity of the tubercle bacillus and have led to the institution of protective measures for both children and adults so that the morbidity and mortality curves for tuberculosis are undergoing a gradual decline. If one is aware of the places in which danger lurks it becomes an easy matter to protect against it and thus even the most dangerous germ to mankind becomes harmless. Regardless which of these three theories of tuberculosis is more nearly correct, the work of these students deserves lasting respect for their honest endeavors in behalf of mankind.

*Hermann Brehmer established the first successful tuberculosis sanatorium in the world.*

Long before the germ causing tuberculosis had been discovered and before physicians generally recognized tuberculosis as an infectious disease, an English physician, George Bodington, a member of the British Medical Association, author of numerous communications to medical journals and proprietor of a private asylum, initiated the open-air treatment of consumption in 1833. Bodington opened the first sanatorium, "White House," for this disease a few years afterward (1836) and published a book on this subject in 1840, in which he condemned the prevalent practice of confining consumptives in a close room and giving tartar emetic in excessive doses and inhaling various gases.

"The only gas fit for the lungs is the pure atmosphere freely administered without fear" was the basis of Bodington's treatment. "Warm close rooms must be avoided; patients should keep away from fires and maintain the necessary degree of bodily warmth by means of sufficient clothing. Windows must be kept wide open." The next important indication is a nutritious diet and, third, rest, thus forming the triad on which all sanatorium treatment today is based.

Hermann Brehmer, a new benefactor, was born, Aug. 14, 1826. After passing his state board examinations to practice medicine, Brehmer settled in Goerbersdorf, Germany, at a time when tuberculosis was considered incurable and was the cause of one seventh of all the deaths in that country. In his doctorate thesis in 1853, he maintained that tuberculosis could be cured, because he had seen healed lesions at the autopsy table. Although his contributions to the science of tuberculosis were numerous, his outstanding achievement was the establishment, in the face of tremendous obstacles, of the first successful sanatorium of the world in 1859.

Many consumptive physicians became patients at the Brehmer "Kurhaus" and among them there was one, Peter Dettweiler, whose first pulmonary hemorrhage occurred while he was still a student. Dettweiler then entered upon long years of illness, but finally became cured in the "Kurhaus," where this idea of being able to cure tuberculosis took possession of his enthusiastic nature and ruled his entire life. His outstanding life achievement was the establishment of a sanatorium for the less wealthy classes. He saw the need for emphasizing bed rest for the consumptive and believed that winter treatment is just as effective as that of the summer, his method being called the "permanent or continuous fresh air" treatment.

[*Concluded in the next issue.*]

# How to Be Helpful to The Hard of Hearing

By Sidney A. Saunders

*The hard of hearing should be addressed slowly and distinctly, rather than loudly. All deaf persons are more or less lip-readers, so that normal speech is always the most intelligible to them.*

THE handicap of deafness is so little understood by persons generally that it may be said not to be understood at all. In this respect deafness is unlike blindness, which makes an instant appeal. Every one is considerate of the blind, and every one is anxious to be pleasant to them. Having evoked a pleased response, acquaintances comment on the brave cheerfulness of the afflicted one.

But the deaf are unable to respond, and their unapproachableness is regarded as a forgivable condition but not interesting. If the deafness is but partial, conversation is held only with a difficulty so constraining to both parties that interest is quickly lost. When the affliction is hidden by a brave effort, misapropos replies cause the sufferer to be adjudged stupid or impolite.

### *World More Sympathetic to Blind*

In a world in which so many people are kind, it is strange to find that deafness is considered so much less tragic than blindness. Yet a playwright recently stated that one of his characters, supposed to be deaf, was addressed by another in a rather long speech, a pathetic effect being intended, yet the audience went into shrieks of laughter; and in "Captain Jinks" one of the comic characters is so only because deafness makes her misfit the situations.

Not only misunderstood by those who are not well acquainted with them, the deaf are often misunderstood by those who should know them well, because the character of the difficulty is not apprehended. For this reason little children so afflicted often suffer keenly because of unjust treatment by those who have the kindest intentions.

The partially deaf continually say, "What?" Certainly they heard when spoken to, but what did they hear? They heard not all of what was said, perhaps only enough to apprise them of the fact that they had been spoken to. The deafened do not catch every sound, but only the prominent ones. For instance, in the sentence, "I shall go home tomorrow," the syllables "I, o, ho, mor" are most easily heard. Perhaps the hearer is helped in interpreting these fragments by the context of other sentences, knowledge of related facts or to some extent by lip-reading, so that though hearing only part he builds up the rest of the sentence. This is difficult and extremely fatiguing. To listen to an address or a sermon, straining to hear, to read the lips and to construct the uncaught syllables from these received, all under pressing haste while further words are being spoken, may be so exhausting that occasional rest is necessary.

### *Piecing Together Fragments of Conversation*

All this building together of fragments is done with more or less unconsciousness of the process, just as a pianist does not continually think of the connection between notes and fingers, and ability is acquired unconsciously by practice from the earliest stages of partial deafness. Deafened children are incapable of analyzing this process, and so cannot explain what they are doing. Hence it follows that their question, "What?" is sometimes rebuked as merely habitual, and the little one is required to repeat what

he heard. Often to his dismay he can repeat the sentence; and this is because, given a little time, his mind can construct the whole sentence from the syllables he has heard. He cannot understand how it happens, and the elders perhaps are confirmed in their belief that the little one is not so deaf as he thinks he is. They may think that the child pretends deafness from laziness or some other motive, or even that he is mentally defective. A kinder theory is that he is merely inattentive, and he is admonished to be alert.

### *Can't Always Be Alert*

Now the deaf are, of necessity, absorbed more or less in their own thoughts or occupations and are inattentive to what goes on about them and what is more or less meaningless to them. No one who has been under the strain of constant watching for something to happen, he knows not what, can fail to see that the command to be alert is almost impossible to obey, and long continued effort at alertness is exhausting. The defect in hearing varies, too, with circumstances of health, spirits or even weather, so that when the same person is sometimes more deaf than at other times, wilful caprice appears to be proved.

To a deaf or partially deaf person, others appear much as do silent figures on a moving picture screen; without, however, the explanatory captions. He is apart from them, and the barrier between is never completely surmounted. He feels imprisoned and that the imprisonment will be lifelong. His aloofness gives him the sense of being unlike others; he seems to himself unreal. He cannot go where others go and cannot do what they do. He is solitary. When this situation, by the kindness of others, is mitigated he feels himself an object

*Parents may think their child pretends deafness from laziness, stupidity or some other motive. And the child is admonished to be more alert.*

of sympathy; and pity, which it would be churlish to resent, nevertheless cloys and is unwelcome. He craves normal social intercourse with his fellow human beings, which he can never have.

His life, too, is not enriched by sharing in some of the perceptions of other persons. Books he may enjoy, but they are but substitutes for real persons. Teachers in institutions for the handicapped agree that the instruction of the blind is far easier than that of the deaf, and that the cheerfulness usually characteristic in the blind is lacking in the hard of hearing.

A help to the partially deaf is for friends before beginning speech to attract attention, then to speak distinctly, rather than loudly. The hard of hearing should be addressed slowly so that there is time for each syllable to reach the ear and be assimilated with the others that have been heard and correlated with the circumstances. Shouting is jarring on the sensibilities of the person addressed, who is always under nervous strain, and perception of meaning comes in many subtle ways, which shouting obscures; facial expression is one, and all deafened persons are more or less lip-readers, so that normal speech is most intelligible to them. For this reason also it is helpful if the speaker's face is not in a shadow.

*The deaf may enjoy books, but books are only substitutes for real companionship.*

Those who are partially deaf should wear an instrument if it will help the hearing, no matter how conspicuous or ugly it may be. Such a device quickly becomes a matter of relative unconcern when one is accustomed to it. The instrument not only enlarges the life of the deafened person but it makes intercourse easier for good-hearted friends; which is a duty to them, for they are no more to blame for the affliction than is the sufferer himself.

At first not too much must be expected of the instrument. It should be remembered that the normal ear selects from many sounds those that are wanted. For instance, when an orchestra is playing, one can follow a particular instrument. But this selecting ability the partially deaf lose from want of practice, and only by practice can it be regained or acquired. Used a few moments at a time the earphone is wonderfully helpful, but listening to a long speech may be extremely difficult and an exhausting nervous strain, even after several years of using. Persons who are not deaf should be delicate enough to pay no more attention to an earphone than to a pair of spectacles.

These lines are written by one who is very deaf and who is convinced that nearly all persons are so kindly disposed toward the handicapped that they will be glad to understand the condition of the hard of hearing, in order that they may meet it more helpfully. Especially is it hoped that parents of partially deaf children may find these hints of use in dealing with their little ones.

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# Beaumont Honored by Physiologists

DR. WILLIAM BEAUMONT, U. S. Army surgeon, who lived from 1785 to 1853, was honored as the pioneer physiologist of the United States at the Thirteenth International Physiological Congress, which met at the Harvard Medical School in Boston in August. His work on the physiology of digestion was chosen to be republished in a facsimile edition and presented with the medal reproduced here to every member of the congress.

Through a peculiar accident, Dr. Beaumont was able to make the first comprehensive and thorough study of the motions of the stomach. Alexis St. Martin, a young French Canadian, was wounded by a gunshot in the abdomen on June 6, 1822, at Fort Mackinac, Mich., where Dr. Beaumont was stationed.

Dr. Beaumont did not believe that the man could possibly live, but when he returned two or three hours later he found the patient doing better than he could have expected. From that time on the wound healed, but the progress was slow and St. Martin's recovery was due almost entirely to the care and interest of Dr. Beaumont.

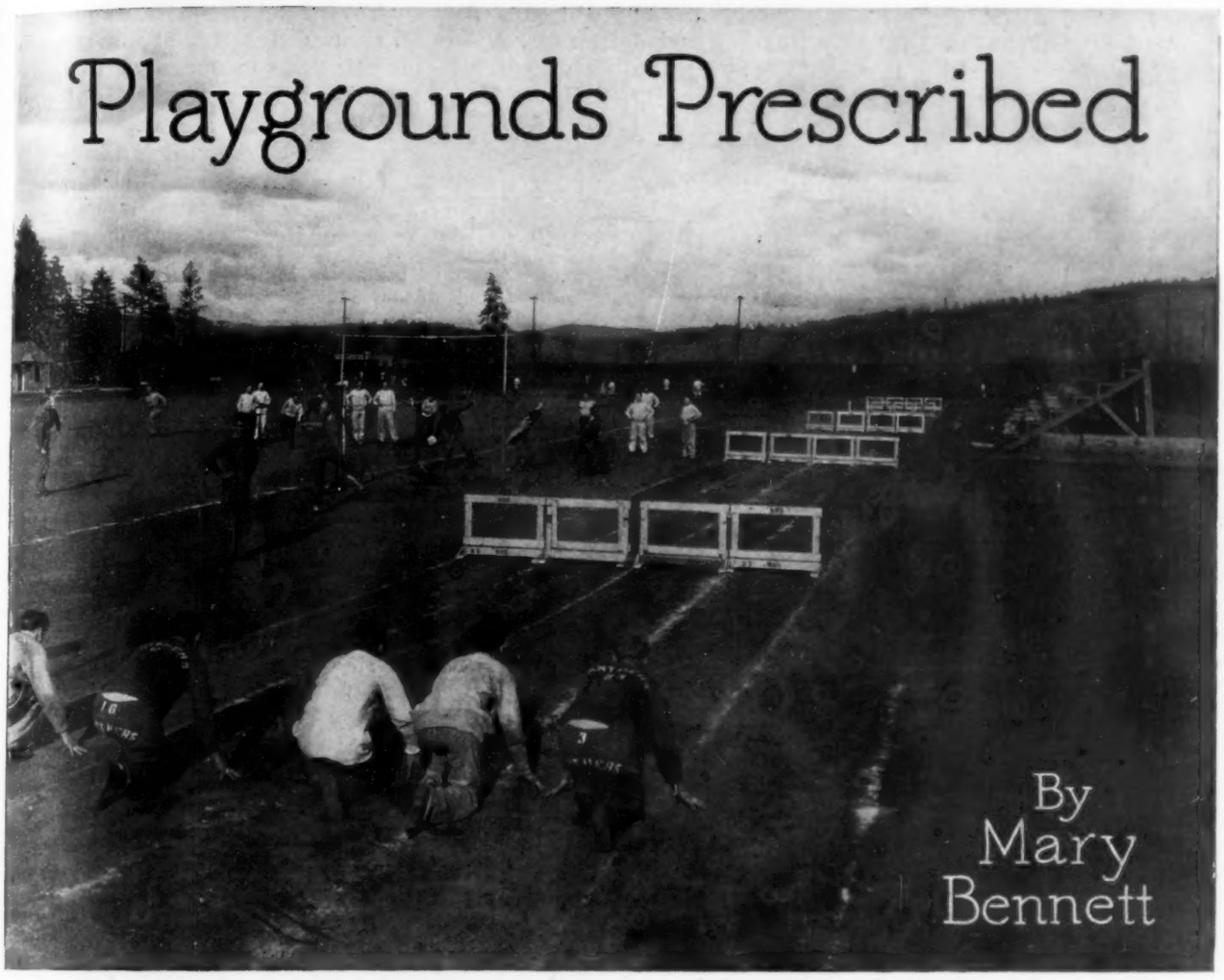
For three years Beaumont supported St. Martin and his family while the man slowly regained his health. But the opening in his side never closed. He thus became a walking laboratory for the study of the physiology of digestion. He led a normal life and lived to be 76 years old.

In the next six years Beaumont carried on many experiments with his famous patient, by which he confirmed many theories and exploded many others. He described the gastric juices accurately and completely. He established by direct observation the profound influence of mental disturbances on the secretion of the gastric juice and on digestion. He also included work in practical dietetics by determining the digestibility of different articles of diet.

The case of Alexis St. Martin is celebrated among physiologists the world over and Dr. Beaumont's remarkable scientific research carried on in connection with the arduous duties of a frontier army surgeon has brought him enduring fame. Beaumont served as an assistant surgeon during the War of 1812 and although he withdrew after the war he returned to the service later and was enabled to secure his greatest patient through his post at Fort Mackinac.

At the edge of a tall bluff overlooking the lake on Mackinac Island there stands an attractive monument marking the spot where the memorable experiments were made. It consists of a Scotch granite boulder resting on tiers of white rock.

# Playgrounds Prescribed



By Mary Bennett

*Track and field events in the foreground and a baseball game on the diamond in the background demonstrate the use made of this Spokane playground.*

A PLAYGROUND is not merely a place for play or a place in which to give boys and girls a good time. It is also a sign of a community's mental and moral health, even a sign of advancing culture and civilization.

In the past few years psychologists have been discovering important facts about the play instinct. There is a reason why a fast game of tennis, which exerts and tires the muscles, leaves the organism relaxed, rested and satisfied. The player has released nervous energy that has been piling up during the day over and above that which has found outlet in his work. Work is good. But work alone does not keep most of us in a state of perfect emotional balance. We need something else, some form of expression more comprehensive than is found in the average daily occupation.

### *Few Jobs Permit Complete Self-Expression*

The continuous, overflowing stream of psychic energy from which we derive all our impulses can never be stopped. It may be suppressed, diverted or thwarted but never destroyed. We may pour it into our daily task, but most persons are not fortunate enough to have a life work that provides them with an opportunity for complete self-expression, meaning complete emotional expression. They end their working day with a great deal of emotional energy undrained.

### *Play Helps Drain Emotional Energy*

What is a person to do with the impulses and interests that cannot be worked out in serviceable activity? Suppress them, jam them into subterranean routes, there to "distil poison and produce festering sores," unless they break out in reaction? Or translate them into some form of imaginative activity?

Psychologists insist that the surest route to a satisfied and successful life is a perfectly balanced and complete expression of all emotional impulses. It is, however, easier to diagnose an ailment than to prescribe a cure. But on one

point there seems to be general agreement. The person who has learned to play has learned a good deal about handling this important human problem. Give a child adequate opportunity to work out surplus nervous impulses in natural play under wise supervision, and he automatically receives most important assistance at learning methods of correct emotional expression. Such play periods are not enough; they will not eliminate the need for wise emotional guidance in the home, but they will go a long way toward solving the problem.

### *Playground Movement Growing Fast*

Communities all over the United States, small and large, are showing increasing activity in establishing playgrounds. There is a tendency to make organized play available to every child in the community in much the same way that the usual mental training has previously been made available in the public schools. This is extremely gratifying to every one who understands the great influence of play in developing a well adjusted individual. It has been said that the ability to distinguish properly between cause and effect and to isolate a cause is the mark of a highly trained and civilized mind. If this is true, it may also be averred that the eagerness that cities everywhere are showing to provide play spaces for children is an indication of an advancing stage of American civilization.

Hardly a week now goes by without the establishment, in some city or town in the United States, of a new playground dedicated in perpetuity to the use of American children. One organization alone, the Harmon Foundation of New York, has been instrumental in the establishment of more than 120 such fields during the last seven years. The chief aim of the foundation in sponsoring these play places has been to further the movement for having play land set aside permanently in advance of growth. A playground today—a building site tomorrow—open spaces and play facilities vanishing before towering skyscrapers—will never help to bring recreation to its natural position as an orienting influence on our social structure. Real playground progress, it is the belief of the Harmon Foundation, will not come from transient play areas but rather from permanent ones, in which community interest, appreciation and tradition may grow with the years.

Harmon fields, therefore, are all dedicated perpetually for purposes of play and recreation. As a means of keeping in close touch with the progress of these affiliated playgrounds, the foundation sponsors an annual improvement contest. This contest serves as a measuring stick by which communities may compare themselves with others meeting the same needs. It also shows the earnestness with which these towns all over the country have taken hold of their local recreation problem. A local newspaper says of the experience of Decatur (Texas) that the community "has acquired a new and hitherto unknown sentiment in the erection of the park, that of organized outdoor recreation."

### *Some Playground Sports*

The variety of play by which the child and the adult may and do obtain emotional expression on these fields is almost endless. Football, push ball, hockey, golf, including crogolf and college golf, track, tennis and paddle tennis, basketball, indoor ball, kitten ball, soft ball, baseball, quoits, croquet, tether ball, swimming, wading, fishing, boating, skating, tobogganning, were widely reported in the honorarium awards given in the improvement contest. Wauseon, Ohio, varied the program with a gun club among the men; Sturgis, Mich., with an archery tilt; Tryon, N. C., with a horse show.

Fremont, Ohio, winner of the first prize of $500 in the contest, listed the following equip-

*Bleachers were needed for Harmon Field at Spokane, and the high school boys cheerfully volunteered to build them.*

*Paragould, Ark., has demonstrated that a playground pavilion can be made ornamental.*

ment for the smaller children alone: sand pile, swings, teeters, slides, sand box, ocean wave, bob swing and merry whirl. The total attendance at this field last summer was 7,601, the daily average being 143.

Handicraft carried on at the foundation's affiliated fields has been found a most popular activity wherever introduced. The children of Fort Lauderdale, Fla., produced enough gay wares to fill an exhibition hall at the chamber of commerce headquarters. The making of miniature airplanes took the lead in Bellefontaine, Ohio. Fremont entered the model airplane show sponsored by the Playground and Recreation Association of America, the instruction being carried on through a series of syndicated articles running in the local newspaper.

### *Play Habits Carry Over to Old Age*

Play means "doing something" to these active towns. The difference between amusement and recreation is pointed out in a Tryon, N. C., newspaper account of a playground lecture: "For amusement you pay some one to entertain you and take no part in it. Recreation or play is something the individual must make a part of himself. It is a training of the play impulses which are as strong in children as hunger and need to be satisfied rightly in order to nourish the character to a balanced development. The child who is taught to play is going to keep the power in later years. He will not be among those who quit because they're old. Most men become old because they quit—quit the normal habits of taking time for play and recreation."

More than 1,000 children were enrolled on Bellefontaine's six playgrounds last summer; indoor baseball, volley ball, horse shoe pitching, tennis (eight courts), golf courses, baseball for men and boys were part of the activities.

An adults' league, composed of railroad workers, merchants, bankers, firemen and commercial travelers, makes use of the playground at Kearney, Neb.

### *Playgrounds Stimulate Picnicking*

Playgrounds are a stimulus to picnics, and in many towns that simple form of outdoor recreation is popular. At Bicknell, Ind., for instance, picnics were held at the field by the Spanish War Veterans, the American Legion, the Church of Christ, the Presbyterian Church, the Clarion Club, the Epworth League, and by several families which held annual reunions. To encourage this use of the park, several picnic tables were supplied, which might be reserved without charge. At Lebanon, Ohio, there is a pavilion that houses dozens of picnic parties during the summer season.

And so the story goes. Reports come from all over the country; at Paragould, Ark., of a fish fry attended by seventy-five business men; at Worthington, Minn., Arbor Day celebration attended by 410 children; at Bend, Ore., a tennis tournament with thirty adults and eighty boys and girls taking part; at Talladega, Ala., field day exercises with 1,000 children entered; at Lebanon, Ohio, a boys' week; at Souderton, Pa., a healthy baby contest; at Coffeyville, Kan., a track meet with pupils from six colored schools in southeastern Kansas on the colored people's playground.

Towns that won awards for outstanding achievement in development and use of their playfields in the Harmon Foundation's 1928 annual honorarium contest for its affiliated playgrounds were: Fremont, Ohio, $500; Paragould, Ark., $400; Kearney, Neb., $350; Hillyard (Spokane), Wash., $300; Bicknell, Ind., $200; Bluffton, Ohio, $200; Decatur, Texas, $200; Lebanon, Ohio, $150; $100 each to Talladega, Ala., Fayetteville, Ark., Coffeyville, Kan., Houma, La., Bellefontaine, Paulding, Wellsville and Wauseon, Ohio, and Okmulgee, Okla.; Worthington, Minn., $75; $50 each to Eureka Springs and Stuttgart, Ark., Alamosa, Colo., Fort Lauderdale, Fla., Canton, Ga., Mayfield, Ky., Sturgis, Mich., Herkimer and Oneida, N. Y., Tryon, N. C., Granville, Miamisburg, Sidney and Wapakoneta, Ohio, Lawton and Waurika, Okla., Bend and Vernonia, Ore., Souderton, Pa., Martin, Tenn., and Stamford, Texas. The decision in granting these honorariums was based on evidence submitted in the form of newspaper and magazine clippings and action pictures taken on the playfields.

*"Hobo Work Day" created gales of laughter at Harmon Field in Okmulgee, Okla.*

From the middle-aged working man of the primitive settlement, driving himself at his task until worn out, with only occasional explosive, isolated, blind discharges of his surplus nervous energy, the American ideal has become the fit, vigorous, golf-playing, exercising business man of today. A little sand garden established in Boston in 1885 was a momentous event, for it was the first supervised playground reported in the United States. From that time until 1899 there were only thirteen cities in the country that provided supervised play facilities. In the next ten years, however, eighty more communities provided playgrounds for their citizens. Now the play idea has permeated not only the large cities, where "he who runs may read" the crying need of it, but also into rural sections and small communities where only the farseeing minority at first realized the need for organized recreation.

## SOME RULES FOR HEALTHFUL EATING

The bureau of health education of the New York City department of health gives the following rules for healthful eating:

1. Don't bore your stomach with a monotonous diet.
2. Don't despise the lowly turnip and onion.
3. Don't scorn the cheaper cuts of meats; when properly cooked with vegetables they are better than a diet of steaks and chops.
4. Buy fresh vegetables when they are plentiful.
5. Allow a quart of milk a day for each child and a pint for each adult.
6. Don't be afraid to try new dishes.
7. Adopt a cosmopolitan menu—become acquainted with minestrone, goulash, Irish stew, pig's knuckle and sauerkraut, and a ragout with vegetables.
8. Don't eat too much sweets.
9. Drink several glasses of water daily.
10. Do real cooking. Good health will not last with last-minute meals.

# SIMPLE LESSONS *in* *Human Anatomy*

*By B. C. H. Harvey*

## LESSON VIII

## THE ALIMENTARY CANAL

THE task of the alimentary canal is to supply the rest of the body with food and oxygen. It also excretes some waste products. It is essentially a thin tube of mucous membrane extending from mouth to anus between the right and left body cavities. It opens to the surface at both ends, except in the earliest embryonic weeks of life, when it is closed at both ends. It is divided lengthwise at each end. The structures that split off from it at the head end become the nasal cavity, the windpipe (or trachea) and the lungs. These take in the oxygen needed for production of energy and throw off the waste gas, carbon dioxide. The tube derived from it at the hind end becomes the urinary bladder and urethra. These carry away the waste products excreted by the kidneys.

All the rest of the tube is the food canal (fig. 69). It includes mouth, pharynx, gullet, or esophagus, stomach (fore gut), small intestine (mid gut), large intestine, rectum and anus (hind gut).

In order that food may be absorbed and transported by the blood and lymph it must first be made fluid. The alimentary canal is able to take beefsteak and popcorn, lettuce and salad oil, bread and butter, or any food whatever and in a short time transform most of it into fluid like the blood fluid.

This work must be performed in several successive stages:

1. The food must be seized, bitten off or sucked into the mouth.
2. The food must be torn or ground up into bits small enough to swallow.
3. It must be carried to a sack in which it can be held for a considerable time.
4. In the sack, the food must be digested and made fluid.
5. The fluid food must be absorbed.
6. The unabsorbable residue must be assembled and thrown out.

The alimentary canal does all these things. It is true that the human animal usually procures his food and drink with his hands, and perhaps breaks or tears it up with them. But the four-footed animals do not. In them the alimentary canal does the whole thing unassisted, and in man it could, and occasionally does, do it all.

Obviously these successive activities must be carried on in successive parts of the alimentary canal, and the food must be made to progress from the mouth backward. Actually the successive parts are especially modified for the performance of these special functions, the mouth for sucking, biting and chewing,

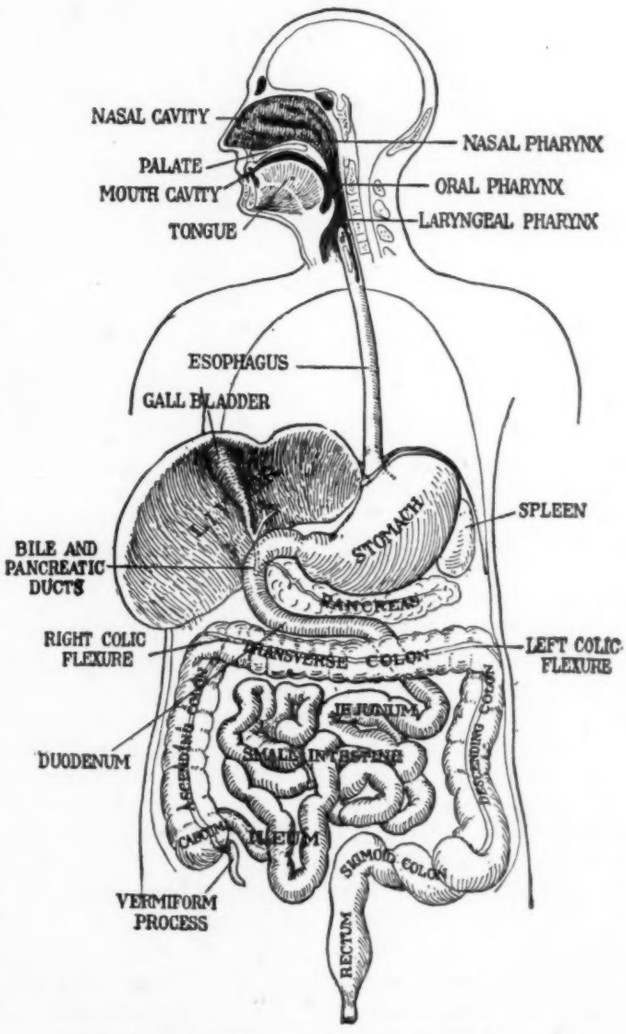



*Fig. 69.—Diagram of the alimentary canal. (From Jackson, Human Anatomy, Blakiston.)*

*Fig. 70.—All the muscles of facial expression are derived from the wall of the fore gut. (From Braus, Anatomie des Menschen, Springer.)*

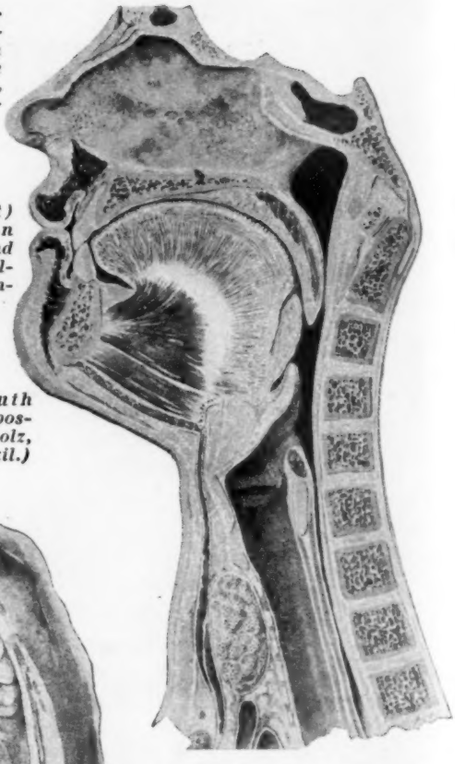
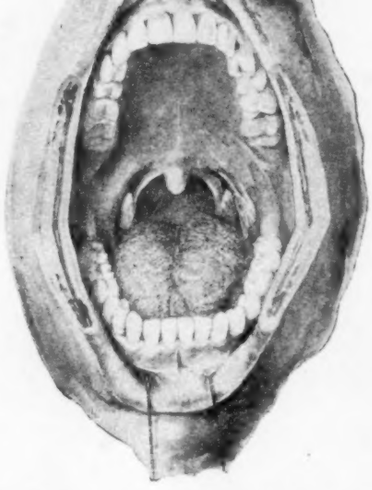


*Fig. 71.—(Right) median section through head and neck. (From Spalteholz, Human Anatomy, Herzil.)*

*Fig. 72.—The mouth opened as wide as possible. (From Spalteholz, Human Anatomy, Herzil.)*



the pharynx for swallowing, the gullet for carrying the food through the thorax, the stomach for digestion, the small intestine for digestion and absorption, the large intestine for a diminishing amount of absorption and for the separation of the indigestible residue and its excretion.

Notwithstanding these diverse functions, there is a uniform plan of structure. The mucous membrane constitutes the innermost layer or coat. Outside it are the layers contributed to it by the ventral mesoderm: first, the submucous connective tissue; then, the muscle coat, and in some places, such as the abdomen, a smooth and shiny coat made by the wall of the body cavity or peritoneum.

The greatest modification is in the head. The food canal extends up above the body wall, which ends at the top of the neck; its expanded upper end, mouth, nose and pharynx, occupies the area in front of the brain and below the eyes, composing the lower part of the face. It is covered only by the skin, and the skin is depressed into nose and mouth and becomes continuous with the mucous membrane of the fore gut. Through both of these face cavities the gut opens to the surface (fig. 71). The lining of both cavities is skin in front and mucous membrane behind. Around them the ventral mesoderm extends, but is not hollow in the head; it contains no body cavity. Here its connective tissue forms a series of bones, mostly U-shaped, surrounding the mouth and pharynx—upper jaw, lower jaw and tongue bone. The muscles formed in the front of the head from the ventral, or gut, mesoderm are the jaw muscles for biting and chewing, the muscles of facial expression (fig. 70), and the pharynx muscles used for swallowing. All these muscles are formed in the wall of the alimentary tube; they are truly gut muscles, even though all are made of cross striped fibers and some, such as the muscles of facial expression, wander a considerable distance away from the gut (fig. 70).

The extent and boundaries of the mouth cavity may be seen in figures 71 and 72. The mouth cavity has for its roof the palate, hard and bony in front, soft, muscular and movable behind. This separates the mouth cavity from the nose cavity in mammals, but not in other animals. Separation is necessary for sucking and all mammals suckle their young. Both cavities open behind into the pharynx (black in fig. 71). The latter has an upper, or nasal, part and a middle, or mouth, part; these parts of the pharynx can be entirely separated from each other by placing the soft palate in the proper position. The soft palate acts like a valve. There is also a lower, or laryngeal, part of the pharynx. It can be shut off from the larynx by the valve-like epiglottis (fig. 71). It opens for breathing and closes for swallowing.

The floor of the mouth is formed almost entirely by the tongue, which is a large mass of muscle covered by mucous membrane. It is

much bigger than is usually realized, because only the tip is usually seen. Above the base of the tongue, the mouth cavity opens into the middle part of the pharynx (figs. 71 and 72). This opening can also be completely closed by placing the soft palate and the arched side of the throat firmly against the base of the tongue. It is closed in filling the mouth by sucking, to be opened of course immediately afterward in swallowing. The lower pharynx is seen in figure 71 to open below into either of two tubes, the esophagus behind (black in fig. 71), or the large larynx and trachea (dark gray and wide open in fig. 71). Food goes through the mouth, the middle and lower pharynx, and the esophagus. Air when breathed in goes through the nose, the upper, middle and lower pharynx, the larynx and the trachea. The air passage and the food passage cross in the middle pharynx like an X.

Some of the special structures that appear in the mouth are formed from the skin. Skin lines the anterior part of the mouth cavity, and it forms lips and teeth. On the posterior part of the red area of the lips near the center the papillae of the skin are very long; they make numerous projections and so make the center of the lips rough. New-born babies of most

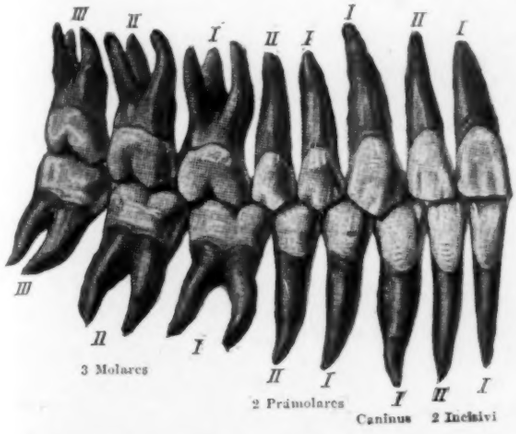



*Fig. 73.—Teeth of the right side, outer surface. (From Braus, Anatomie des Menschen, Springer.)*

mammals possess these long papillae at birth. They probably help the baby to grasp the teat firmly with his lips; they disappear after a few weeks.

The teeth are formed in the skin, not in the jaws. The bone grows around them only after they are formed. Some fishes, such as sharks, have little teeth on the outside of their faces, and many reptiles have teeth all over the inside of their mouths. In these animals all teeth are sharp and pointed. In the reptiles they are pointed backward and when the bone grows round their roots they become fixed in that position. That is why a snake cannot, even if it wants to, let go of an animal after it has begun to swallow it.

Human beings have two rows of tooth germs —an outer and an inner row. Both rows are curved and are parallel to each other. The outer row forms the milk teeth. The inner row grows later, making the permanent teeth. No species of mammal has regularly more than these two sets, though an occasional person may grow a third set of teeth still farther back, in extreme old age.

The arrangement and character of the permanent teeth are shown in figure 73. We have on each side in each jaw two incisors (cutting teeth), one canine (tearing tooth), two premolars and three molars (grinders). There are thus thirty-two altogether. Each tooth has a crown covered with enamel (fig. 74). The enamel of the teeth is much the hardest substance in the body. It is made by little sacklike ingrowths of the outer layer of skin, or ectoderm, and is deposited on the surface of the tooth before it breaks through. After that, the little enamel gland is destroyed; no more can be deposited and, if the enamel is then worn through, the yellow dentine of the body of the tooth is exposed. Persons over 40 have the enamel worn off the tips of the incisors; after 50, the dentine of the canines also begins to show through.

*Fig. 74.—Section of molar tooth, showing enamel, dentine, pulp cavity and cement. (From Braus.)*

The rest of the tooth is made by the connective tissue of the inner layer of skin, or corium. It consists of a body and roots made of dentine, a substance chemically like bone, but with fibers arranged radially (fig. 74) instead of in superimposed layers, as in bone. Body and roots are hollow. The central cavity contains blood vessels and nerves. They enter at the root tips. On the outside of the deeper parts of a tooth there is a substance which looks like true bone and which attaches the roots to the socket in the jaw. But this substance is made by the skin, not by the jaw bone.

It will be noticed (fig. 74) that the medial incisor of the upper jaw is wide. It touches both the lower incisors and so every tooth of each jaw bites against two teeth in the other jaw except the lower medial incisor. The canine, or tearing, tooth is powerful. It is used by tigers and even by dogs and cats. Those who think that man is not related to the lower animals may well take a prudent look at this big tooth.

The molars have three roots in the upper jaw, two in the lower. All other teeth have only one root each. The third molar, which is the wisdom tooth, never erupts in some persons. It varies greatly in size, a characteristic of parts

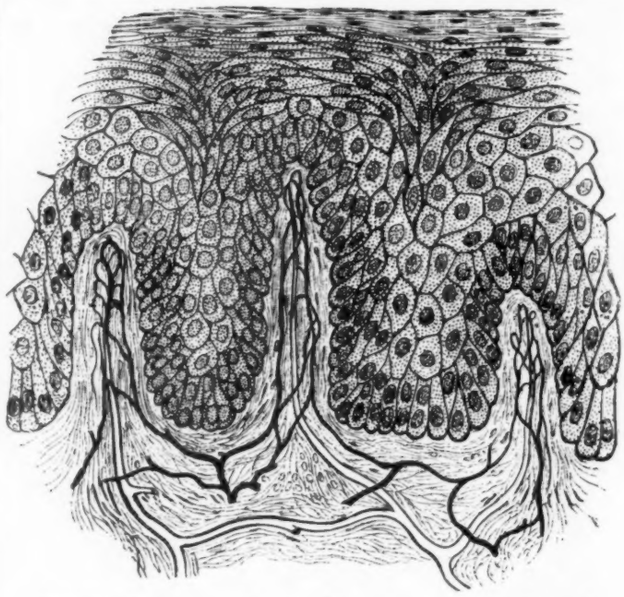


*Fig. 75.—Mucous membrane with many layers of cells, such as line the mouth, pharynx and esophagus. Magnified 240 diameters. (From Toldt, Human Anatomy, Macmillan.)*

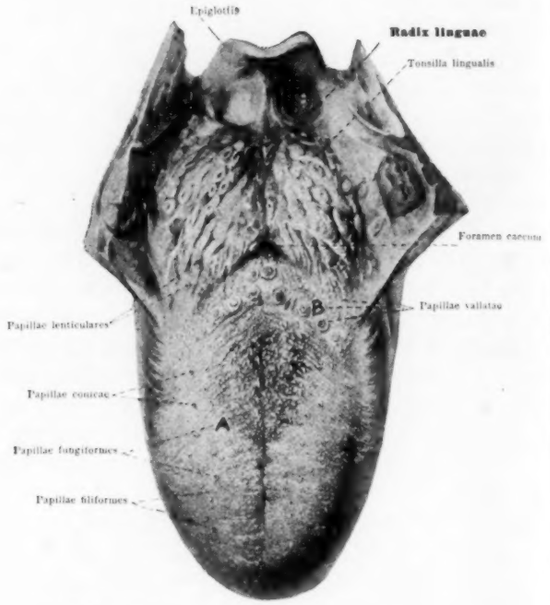



*Fig. 76.—The tongue viewed from above. (From Spalteholz, Human Anatomy, Herzil.)*

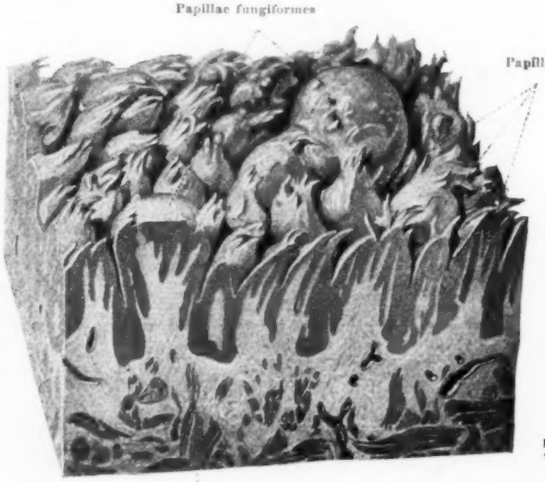



*Fig. 77.—Small area from surface of tongue. Magnified 16 diameters. (From Braus.)*

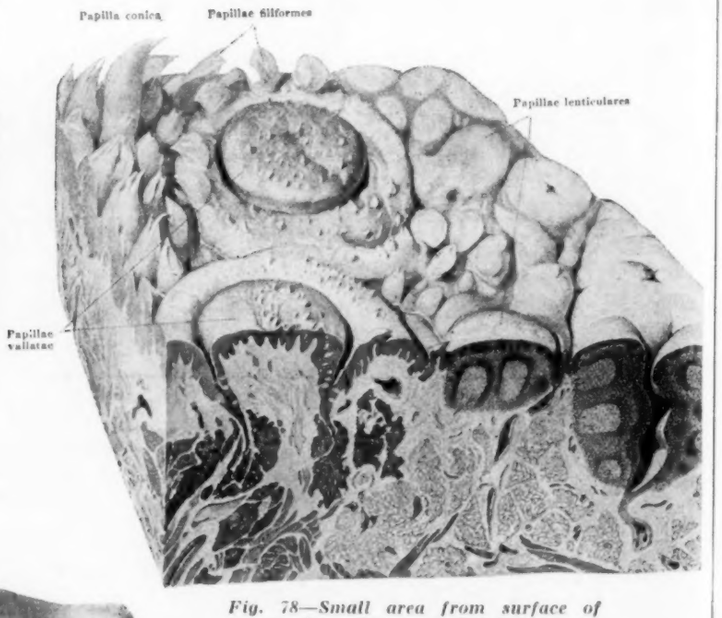



*Fig. 78—Small area from surface of tongue, from region marked B in fig. 76. (From Braus.)*

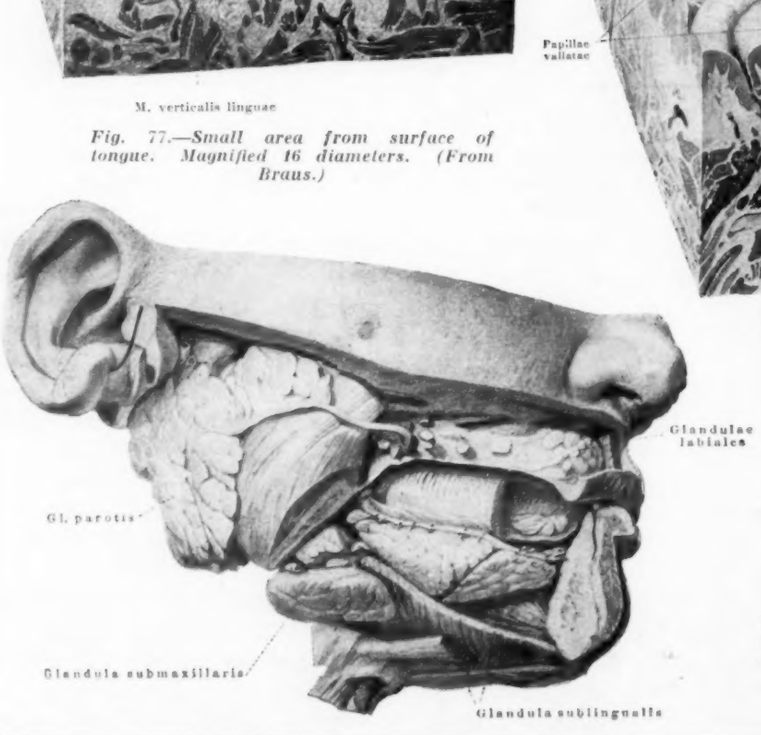



*Fig. 79.—Salivary glands, large and small, dissected from the outside. (From Braus, Anatomie des Menschen, Springer.)*

that are disappearing in evolution, for the lamp flickers when it is going out. It is disappearing because our jaws are shortening. We secure our food with our hands and so do not need the long prominent jaws by which the four-footed animals must seize their food. Our jaws are too short even for three molars; and the last one, when it does grow, is often bunched up against the second molar and becomes impacted.

Other special modifications in the mouth appear in the mucous membrane. In general the mucous membrane of mouth, pharynx and esophagus is thick, tough and strong. It has to be, because some food is rough before digestion in the stomach. Furthermore, some men bolt their food like dogs. Primitive men probably bolted their food often, and we inherit our structure from them. It consists of many layers of cells (fig. 75), usually from ten to twenty. It looks like the epidermis and the Germans call it the mucous skin (schleimhaut); papillae project into it just as into the epidermis.

Over the upper surface of the tongue are thousands of these papillae, which are unusually large (fig. 76). They stick up above the surface about 1/40 inch, giving the tongue its rough appearance and texture. There are three principal kinds of these papillae. Most numerous are the fringed ones, filiform papillae (fig. 77). They end in a terminal fringe. The fringe is made of the superficial layer of the mucous membrane, which here, as in the epidermis, is horny. These horny fringes are directed for the most part backward. They enable the tongue to lick substances off a smooth surface. They are well developed in cattle, which thus are able to seize long grass and hay with their tongues. In cats the horny surface layer is especially thick and tough and makes rigid spines. Thus cats can rasp off with their tongues the last bit of meat from a bone, and even draw blood by licking a child's hand. Human beings have a few papillae in which the horny fringe is matted together into one horny spine. They are called conical papillae (figs. 76 and 78). Particles of food may collect in the fringes, and bacteria may grow there. One kind of bacterium grows there in long strings (leptothrix) and these often are entangled in the fringes.

Less numerous, but bigger are the papillae shaped like a toadstool (fungiform papillae). At the back of the tongue (fig. 76) are about ten papillae with moats and walls around them, known as papillae vallatae. They are large and arranged in a ∧ shaped line. In Mongolian and African races the line is ⅄ shaped.

Fungiform papillae contain a few taste buds (fig. 77). One is shown on the left of the illustration. These are tiny flask-shaped structures which open into the moats or onto the surface. Substances to be tasted must be dissolved and the solution must bathe the surface where the taste bud opens. Just behind the farthest back of the walled papillae in the middle line is a pit sometimes 1/3 inch deep. It is called the blind foramen (foramen cecum). The thyroid gland grew off the mucous membrane of the tongue at this point. The pit is in the stump of its stalk, but all the rest of its stalk is lost. Behind this pit, at the base of the tongue, the mucous membrane is full of little rounded masses about 1/8 inch across, with pits in the centers (fig. 78, right). These are sometimes called lens-shaped, or lenticular, papillae. They are full of little white cells identical with those found in lymph. These cells multiply in the germinal centers (whiter in fig. 78) and at the periphery they wander off or are thrown out into the pits. This structure is like that of the tonsil, and this area at the base of the tongue is sometimes called the lingual, or tongue, tonsil.

Another group of special structures formed from the mucous membrane of the mouth furnishes saliva. Dry food requires a lot of it. Spit-ball pitchers need a lot. An ordinary man produces 1½ quarts of it each day, and a cow, when eating hay, about 15 gallons. Now the mouth mucous membrane is of the stratified, or many layered, type. The surface cells are flat and scalelike, and cannot well secrete fluid. Only big thick cells can secrete large amounts, but the fluid can run through small tubes or ducts. So the mucous membrane of the mouth meets the need by sprouting many hollow processes into the connective tissue under it, each connected with the cavity by a duct. These processes become the glands and they secrete the fluid and pour it in through their ducts. There are thousands of glands all around the mouth. The under surface of the hard palate is thickly covered with little ones. Some of the bigger ones dissected from the outside are shown in figure 79. A few of them are huge but only the four largest are named. They are on each side—the parotid gland, under the ear; the submaxillary gland, under the lower jaw; the sublingual gland, under the side of the tongue, and the anterior lingual glands under the tongue near the tip.

These glands are often far away from the mouth cavity and so have long ducts, some of which appear in figure 79. The duct of the parotid gland opens opposite the second molar tooth of the upper jaw. The submaxillary and sublingual ducts open on two little elevations in the floor of the mouth, one on each side of the middle line under the tongue.

The finer structure of a submaxillary gland is shown in figure 80. The cells in the lower central part of the picture have platelike nuclei flattened against the outer end of the cell. They secrete mucus; their product needs a roomy duct because mucus is thick and does not flow

freely. The cells at the extreme right have spherical nuclei nearer the center of the cells. They secrete a ferment in a thin watery solution and so their product needs only a small duct; indeed, a lot of it is secreted into tiny clefts between the cells and flows into the ducts through minute openings (fig. 80, detail at left). The parotid gland secretes no mucus but only the thin ferment-containing fluid. Most others secrete at least some mucus.

Around the bases of the cells at the end of a duct are contractile cells with many long arms. These look like octopuses and their long arms embrace many cells (fig. 80, center above). They are believed to squeeze out the fluid contained in the cells. Everywhere on the upper surface of the tongue are small glands under the mucous membrane. They appear in figure 78, under the papillae with moats (dark) and under the lens-shaped lymphoid papillae (light gray). The former secrete ferment, the latter mucus. The mucus lubricates the mouth surface and the food. The flow of ferment-containing fluid washes out the moats and the clefts; it washes away in solution the substances which stimulate the taste buds and so allows them to rest and be ready to give new taste sensations when other substances are taken into the mouth. This fluid also prevents bacteria from growing in the clefts and crypts and around the fringed ends of the filiform papillae by washing them away. In some forms of sickness these glands are not active, the surface of the tongue is not rinsed clean, and it becomes coated. Bacteria grow, and the long, thin strings of leptothrix flourish, interwoven with the ends of the filiform papillae. That is one reason why the doctor wants to look at the tongue of his patient. It usually looks worse mornings after it has been quiet.

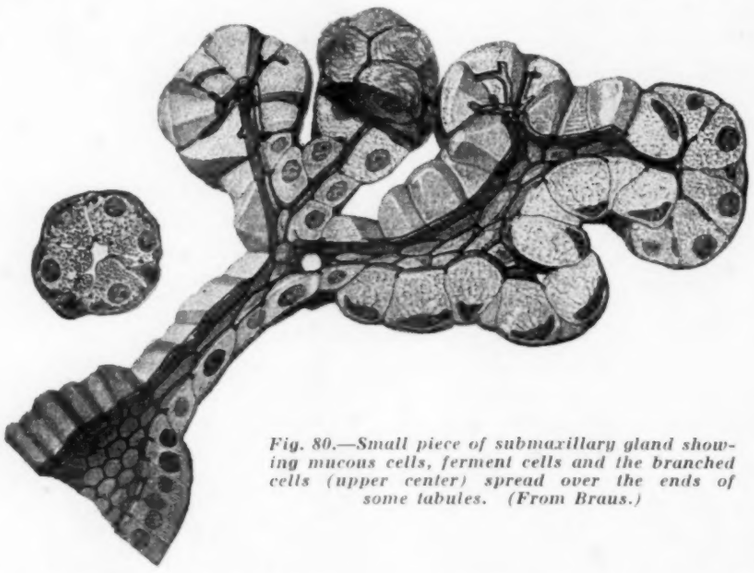


*Fig. 80.—Small piece of submaxillary gland showing mucous cells, ferment cells and the branched cells (upper center) spread over the ends of some tubules. (From Braus.)*

The ferment formed in the saliva is ptyalin; it is able to convert starchy substances into sugar and to make them soluble. Thus it helps in the digestion of potatoes, corn, bread and other foods that contain starch.

The great mass of the tongue is made up of muscle (fig. 71). This muscle runs in every direction. Many tongue muscles arise from the bones nearby and especially from the small tongue bone, or hyoid bone, beneath it (see figure of skeleton, page 604, June number). Other muscles are not attached to bone but are entirely within the tongue substance. Among them are the vertical muscle, the transverse muscle and the longitudinal muscles. All the muscles are inserted into the connective tissue which lies under the mucous membrane and extends throughout the tongue. The connective tissue contains an unusually large proportion of elastic fibers and so the tongue tends always to return to the resting form and position.

But the tongue does not rest much in waking hours. In chewing it moves the food about or holds it between the grinders. In talking it moves constantly together with the lips and jaw. A simple and interesting experiment may be made by pronouncing the letters of the alphabet and noting the position of these parts—of the jaw in pronouncing l, m, o, oo and y, of the lips for b, m, o, p and g, and of the tongue for a, c, d, g, t and z. Racial differences in speech are due partly to racial peculiarities in mouth parts. Thus tongues of different form and size are required to pronounce the Italian r, the Scotch r and the American r.

In sucking the tongue does most of the work. When the mouth is closed off from the middle pharynx by drawing down the soft palate and its arches against the base of the tongue, then suction can be created in the mouth by drawing down the mass of the tongue in front of its base. In this way the mouth cavity can be filled with fluid, which is afterward swallowed. The force of suction can be considerable. It is sufficient in a man to lift water about 5 feet. Only the mammals can do this; other vertebrates cannot. Mammals must be able to do it or the young could not suck. Only the mammals have throats small enough to be closed. They can shut the mouth off from the pharynx or connect it at will. Thus a horse can drink from a brook below its feet and then swallow with its head down, but a hen has to lift its head. The small throat of man and mammals requires that the food be swallowed in much smaller masses than in lower vertebrates.

*(To be continued.)*

HYGEIA
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# *Plain Facts about Health and Disease*

## A SAFER AMERICA

THE Eighteenth Annual Safety Congress held under the auspices of the National Safety Council will take place in Chicago, September 30 to October 4. Here for a period of one week, in 125 different sessions, 354 persons will concern themselves with advising thousands of listeners how to make life safer for humanity. Few people realize the importance of accident prevention in modern civilization. Deaths from falls, from drowning, from gas poisoning and by other accidental means constitute a tremendous portion of the causes of fatalities.

The speed of modern traffic, the introduction of the street car, the electric railway, the automobile, the airplane, the speed boat and numerous other means of conveyance have added greatly to problems of transportation. The gradual replacement of slow hand labor by rapid machines attended by human hands has brought into every industry many new problems of accident prevention. Such subjects as automobile accidents, noise in its relation to accidents, home safety, and the meetings of the aeronautical section indicate the great variety of the problems that are to be discussed.

Within the last year new hazards have come to the attention of specialists in the field of accident prevention. The absorption of poisons through usual and unusual channels, the hazards of the rubber industry, the industrial care of the eyes and deaths due to mechanical refrigeration are problems that have arisen within the current period.

There is hardly a newspaper in the United States that does not list its town's daily toll of deaths due to the motor car. These are preventable deaths in many instances, yet forty-three out of eighty-five cities in the United States had more deaths in the first seven months of 1929 than in the same period of 1928, and the pity of it is that 37 per cent of all fatalities were children under 15 years of age.

Meetings such as these represent attempts of mankind to salvage human life out of the great toll of injury and death associated with the speed of modern civilization. It is well that there are at least a few thousand men and women who are willing to devote their careers to the protection of their fellow men.

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## RADIOACTIVE DRINKING WATERS

FOLLOWING closely on the discovery of radium and its limited application in the treatment of disease, innumerable preparations appeared on the market purporting to contain this valuable substance and were sold with exaggerated claims as to their virtues in healing disease. Actually the amount in most of them was not sufficient to have any demonstrable effects. Special jars supposed to confer radioactivity on the water they contained had not enough radium in their walls even slightly to disturb the leaf of an electroscope. Astonishing healing powers were ascribed to natural springs the water of which was "discovered" to be radioactive.

The Council on Pharmacy and Chemistry of the American Medical Association has carefully watched this development. In the considerable period of time that has elapsed evidence that radioactive drinking waters are beneficial to human health has not been convincing, in the opinion of the council. The whole matter is dismissed as unproved and unsubstantiated in the following statement recently issued:

"From an examination of the available evidence, it appears that the value of the internal use of radium solutions or of water containing radon in chronic arthritis, gout, neuritis and

high blood pressure is not demonstrated by controlled clinical evidence; that in spite of many years' trial, acceptable evidence has not become available and until such evidence does become available the Council has decided not to accept generators for the production of water charged with radon or radium solutions intended for intravenous use."

Today all sorts of radium solutions and apparatus for making such solutions are offered both to the physicians and to the public with loud claims as to their virtues not only in the diseases mentioned in the Council's report, but also for anemia, rejuvenation, regeneration, leukemia, boils, blackheads and what have you.

This indeed, regardless of whether the devices provide any considerable amount of radium activity! The Council's new report expresses the conviction that even if radioactivity is present there is no evidence that the waters have any value in the treatment of the diseases that have been named.

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## HAY-FEVER

ABOUT this time of the year the sufferers from sensitivity to ragweed begin to long for the first frost. About one hundred years ago an English physician named Bostock described a sensation he had of swelling of the eyes, itching, smarting and much running of tears when he looked at a light as the typical symptoms of a condition from which he suffered every summer. Associated with these symptoms were fulness in the head and an irritation in the nose with fits of severe sneezing, sometimes so violent that they caused pain in his chest. Bostock pointed out that persons afflicted with these symptoms were irritable and tired most of the time because they slept poorly at night. He recognized also that they were very hard to get along with around home because of their emotional upsets associated with their conditions. He called the disease "summer catarrh" and also suggested the name "hay-fever."

In the hundred years that have passed much has been learned concerning this disease. The public may be assured that the condition is not contagious. A history of the fact that relatives have suffered is found, however, in from fifty-eight to sixty-eight out of every hundred persons affected. There may be something in the constitution or body of the person that may be inherited and that makes him particularly sensitive to certain protein substances. It is well established that the disease may be developed in persons when none of their ancestors has been afflicted with hay-fever.

Hay-fever is due to sensitization to the pollens of plants, principally ragweed. The dwarf and giant ragweed grow in abundance along country roads and in vacant lots. The pollen of the ragweed is light and is easily carried by the wind for long distances. An average city lot of ragweed will produce 100 ounces of pollen in one season, which is about 60 pounds to the acre. For this reason, in many large cities, under the direction of the health departments, attempts are now being made to relieve hay-fever by systematically removing from all vacant lots weeds that pollinate. Those who go away to parts of the country where the ragweed is not prevalent are free from hay-fever during the time of their absence. Others avoid the pollens by sleeping with their windows closed or by having air filters in their bedrooms. Others attempt to avoid the pollens by escaping to the heights or living on the top floors of high apartment buildings. The wind, however, will carry the pollens to considerable heights, as has been shown by studies made in airplanes by various investigators.

Modern scientific medicine offers a certain amount of relief to some people through desensitization. A scratch is made on the skin not deep enough to draw blood but deep enough to penetrate the outer layers. A small amount of dried pollen is placed on the scratch, moistened with a drop of a weak alkaline solution and kept moist for thirty minutes. As a control another scratch is made and moistened with the alkaline solution but the pollen is not applied. If the person is sensitive to any pollen, itching and swelling of the skin around the cut takes place. When this occurs, the person is said to give a positive reaction to that pollen. It is then possible in some instances to desensitize the person by injecting regularly into his body

small doses of an extract of the pollen. Not all persons, however, can be desensitized, and in a certain percentage of instances the method seems to fail.

## ALUMINUM

ALMOST every one knows that trade wars have resulted during the past few years in a tremendous amount of argument as to the importance of aluminum in its relationship to the human body. Because the advent of the aluminum cooking utensils injured greatly the sale of other types of apparatus for this purpose, propaganda began to appear to the effect that the cooking of food in aluminum cooking utensils resulted in cancer. There is not the slightest scientific evidence on which to base such a conclusion.

The manufacturers of a baking powder containing aluminum have conducted a merry war with those promoting a powder that does not contain this substance.

Aluminum occurs in nature and is bound to get into the human body. For all these reasons investigators have undertaken a study of the effects of aluminum on the human body over a period of years and the results of these investigations are now beginning to be available.

A series of investigations carried out by Prof. F. P. Underhill and his associates in Yale University have dealt particularly with the question as to how aluminum is taken up in the body and what becomes of it. It was found that aluminum occurs in the blood and tissues of normal animals which are fasting, that it is regularly absorbed into the body in small quantities when taken in food, that the body is likely to take up only a certain amount, after which absorption decreases. The aluminum that is absorbed circulates in the blood and is settled in some of the tissues and the excess is excreted, usually in the bile. In the blood of normal men aluminum occurs in small quantities in many instances, although not in all men. It varies from time to time in the blood of the person in whom it occurs and may be excreted also by way of the bladder.

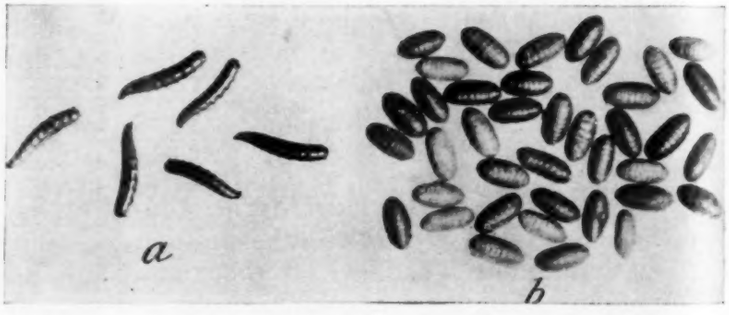
The tissues of persons coming from various portions of the United States were studied and it was found that persons living in some districts have more aluminum in their organs than others. This is apparently to be traced to the diet, water supply and the type of soil. The amount of aluminum in the body seems to increase with advancing age. No apparent relationship could be found between hardening of the arteries and the aluminum content of the blood. In some cases there was more aluminum with high blood pressure and others with low blood pressure.

Among the food substances examined, cherries and onions were found to contain the largest amount of aluminum. Fairly large quantities were found also in lettuce, milk, flour and liver. Aluminum was also found in vegetables such as string beans, beets, cantaloup, sweet corn, potatoes and various fruits. Relatively little aluminum was found in apples, eggs, oranges and watermelon.

It is apparently quite possible to poison an animal with an overdose of aluminum. It is also possible to poison an animal with an overdose of copper, of phosphorus, of calcium and of other substances which are considered essential to human life. Here again, as in practically every phase of human activity, the question of overdosage is important. For years we have realized the importance of moderation in all things. Quite recently we have begun to realize the tremendous importance of very small quantities of certain substances in relation to human life. A tiny dose of iodine or of phosphorus may be of vital importance to the human body; a large dose of either substance may be a dangerous poison. Apparently aluminum is one of the metallic elements that has regularly entered for years into the human being by way of the diet and without dangerous results. There is a possibility that a great overdose of the substance would be harmful, but it is hard to conceive how a dose can be had through baking powder or through the use of aluminum cooking utensils that will cause harm to the average human being. Apparently the substance is not accumulated in great amounts in the body, and when a certain level has been reached the excess is excreted.

*Photos by Underwood and Underwood*

## *HAVOC IN FLORIDA*




Florida may soon have relief from the invasion of the Mediterranean fruit fly and the resulting economic pressure. For six months the orange, grapefruit and other fruit groves have been ravaged as shown in the picture above. In the upper right corner is a grapefruit destroyed by the vicious insects. At the right are the pests themselves in the two stages at which they cause most damage: *a*, larvae, or maggots, and *b*, chrysalises. Government entomologists have now devised a method of processing the fruit by which it is hoped that the incoming crop may be saved.

*Pacific and Atlantic*

NEW YORK TAKES DIPHTHERIA PREVENTION TO SLUM CHILDREN on board a health department truck.

MEMBERS OF THE ICE PATROL STATIONED IN THE NORTH ATLANTIC to warn vessels of icebergs in the travel lanes take a swim alongside a great berg.

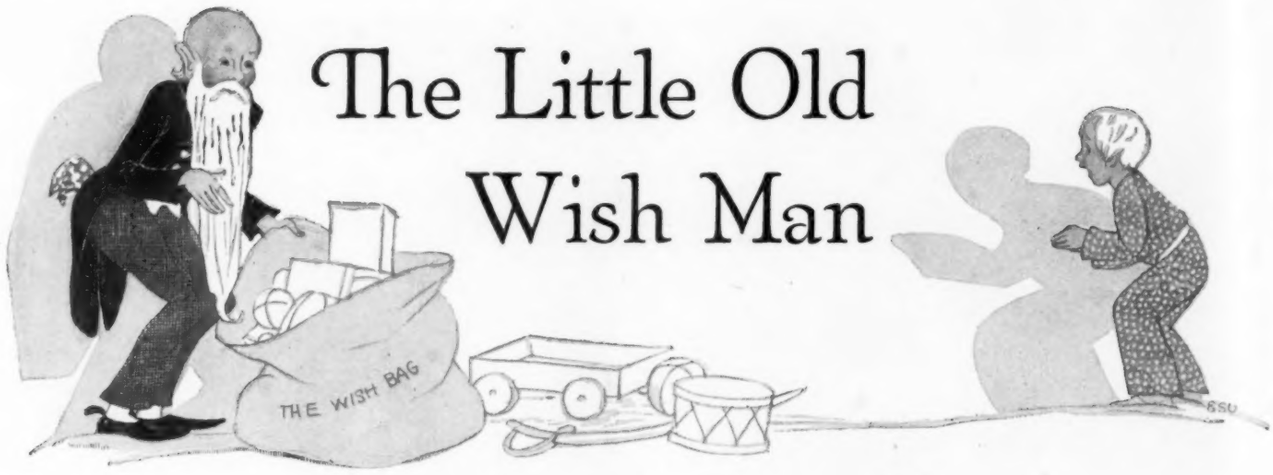
*Underwood and Underwood*

WOODS AND WATER PROVIDE HEALTHFUL RECREATION AT WANNSEE, a popular resort near Berlin, Germany.

*Underwood and Underwood*

"O wood, burn bright; O flame, be quick," chant the Camp Fire Girls, for appetites are ravenous after active days in the open air at the Chicago Council's camp at South Haven, Mich.

*Underwood and Underwood*




# The Little Old Wish Man

*By Ida Spaeth*

THE little old man with the long gray beard entered the room in which Tommy was lying fast asleep. He dropped his heavy wish bag on the floor and sat down to mop the perspiration from his brow.

"Well, Tommy, I am here at last, though I thought I should never find your room. It is a long way to come," murmured the wish man, "and that old bag is full of all sorts of wishes, and it's mighty heavy."

"Oh," said Tommy as he rubbed his eyes and looked up, "it's the little old man of the woods. Now I can see you, but today when I talked with you in the garden I could only hear your voice. So you brought your wish bag and now I may choose my wish?"

"Yes," answered the little old man, "I brought the wish bag, and here are all the wishes." And then he spread out before Tommy's astonished eyes, wagons and sleds, engines and aeroplanes, cowboy suits and sailor suits, and a thousand interesting things. I could never tell you all that a wish man carries in his bag, for boys and girls wish for so many things and the little old man of the woods must always keep his bag well stocked.

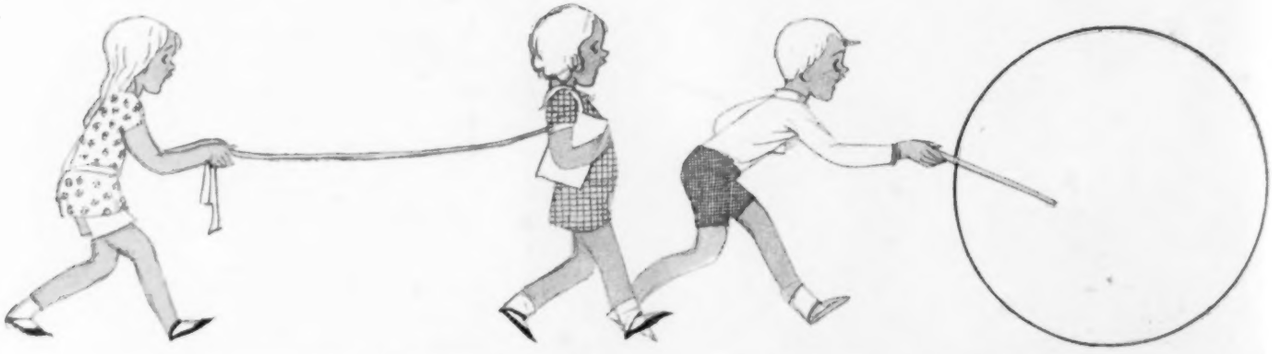
Little Tommy examined each article carefully. It was hard to decide among so many wonderful things just what he wanted most of all. The more he looked the more he wished he might have them all and yet the little old man had promised him only one wish.

Tommy had about decided to tell the wish man to give him anything he had in his bag because he just couldn't decide, when suddenly he spied something in a big brown box the lid of which was half way off. It was blue with brass buttons. He went closer to examine it and, behold, the box held the very thing he had always yearned for. A large gold badge, a white cap with dark blue visor and golden eagle with wings outspread, a pair of white gloves and a fine, new silver whistle completed the outfit.

Tommy hesitated no longer. With shining eyes and fluttering heart he exclaimed, "Ah, little wish man, I have found just what I want most of all."

"Uh," said the little old man; "I guess it's the engine. Most boys wish for engines."

"No, it's not the engine, little wish man; guess again."



*"We never play in roadways or highways because it is very, very dangerous."*

"Well, then, it's the box of tools. Every boy wants a box of tools."

"No, you're wrong again; it's not the box of tools."

"Well, now, let me think." And the little old man stroked his long beard and pondered. "It must be that train of cars you want, Tommy; that's what it is."

"No, little wish man, you'll have to give up. I've wished for the traffic policeman's suit; that's what I've wished for. I want to be a fine, big, strong traffic policeman at a busy intersection of streets.

*"I want to be a fine, big, strong traffic policeman."*

"Whew!" said the little old man, as he caught his breath. "A traffic policeman! That's a big order for a little boy. Why, a traffic policeman must know all the traffic rules. He must help to prevent accidents. He must guide little children and old people across the street when the traffic is heavy. He must know when to blow the whistle and let the vehicles by. He must stand straight and tall, be kind and honorable and know so many, many things that I wonder—I wonder—"

"But, little wish man," pleaded Tommy, "I know most of the traffic rules already. You promised, and you know a gentleman always keeps his promise."

"Yes, yes, I know," said the little old man. "But how could such a little boy know the traffic rules, tell me that? How could he? And how could a boy be a traffic policeman without knowing the rules?"

"Didn't you ever go to school, little wish man? That's where I learned the traffic rules," said Tommy proudly.

"Well, now, who ever heard of such a thing? Learning traffic rules at school? Tell me some of the things you learned at school about being careful when you cross the street, and if you really know the rules," said the wish man doubtfully, "you shall have the suit."

"First of all," said Tommy quickly, "if a subway is near the school, we always cross in it, because this is the surest way to prevent accidents.

"If no subway is near, we always cross in the cross-walks where traffic officers are on duty, even if we have to walk farther, because the traffic officer watches out for us and even comes to the curbing sometimes to help us across in safety.

"We never step from the curb without first looking to see if it is safe, and we never run across the street because we might fall.

"We never play in roadways or highways, because this is very, very dangerous.

"We never ride a bicycle or use roller skates in crowded streets, because automobiles move so fast and there is great danger of being run over.

"We never steal rides on the back of trucks or hitch our wagons or sleds behind them.

"We never run in the roadway after a ball, as that is dangerous too, and many children are injured by fast moving cars when chasing balls into the street.

"Of course we cross the street only when the signal says 'GO' and the traffic policeman motions for us to come."

"Stop, stop!" said the little old man of the woods. "I'm sure you know more traffic rules than I do. The traffic policeman's suit, badge, cap, gloves and whistle are yours. Take them all, Tommy, and I hope you will be the finest traffic policeman that ever blew a whistle." And he was.

*"If no subway is near, we always cross in the cross-walks where traffic officers are on duty, even if we have to walk farther, because the traffic officer watches out for us and even comes to the curbing sometimes to help us safely across."*

HEALTH *and the* SCHOOL

*Edited by*
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# *The Educational Value of a School Cafeteria*

CONVENIENCE rather than health was responsible for the introduction of the school cafeteria. Carrying lunches from home naturally contributed to disorder and to problems of discipline. With the rapid increase of attendance in the intermediate, junior high and senior high schools, along with steam roller methods applied to shortening the school day so that only a few minutes were available for lunch, the introduction of the school cafeteria became virtually a

*At little expense a dismal cafeteria can be made cheerful.*

necessity. Today the school cafeteria is a standardized cog in the well lubricated school machine.

Those in control of school cafeterias who appreciate the sanitary significance of the cafeteria and its educational possibilities, are nearly as rare as hens' teeth. Often the cafeterias are located in dark, unattractive basements; the food is inferior; pupils are obliged to eat in a rush, and little or no interest is taken by the school in the pupils' choice of food.

It is too much to expect that every school cafeteria will immediately correct all the evils to which it may be heir. However, there is not a single school cafeteria that cannot improve its service as a vital educational institution. Education means change. In a school with teachers wide awake in matters of nutrition the children will graduate with better food habits and attitudes. In this educational process the school cafeteria should play a vital part.

### *Fostering Better Food Habits*

We should like to make the following suggestions as to how this may be brought about:

1. *Serve only the best food.* This means that somebody trained in home economics should be in charge. Often one may be conducted into a well equipped school cafeteria by a proud principal only to find that hot dogs, pickles, candy and other questionable foods are in evidence. Although candy is a food, it is a deficiency food, and when eaten first tends to cloy the appetite for more substantial foods. Unless there is some supervision of the pupils' choices, a service not difficult to provide, candy should not be sold at school lunchrooms.

I know of one teacher-training institution in which the food provided at the cafeteria was so poor that the majority of the faculty members either carried their own lunches or frequented the luncheon places in the neighborhood. A cafeteria provided with foods best for children is educative in itself, as it presents to the pupils standards of what good food may be.

2. *Make the cafeteria attractive.* Usually the cafeteria is just the cafeteria. No effort is made to give it an interesting name. If your cafeteria is nameless, you can start a friendly contest among the pupils. One can think offhand of any number of attractive names, such as "The Royal Inn" or the "Sign of the Gray Goose." Art pupils can design a unique sign to fasten above the door.

At little expense the dismal appearance of the interior may be changed by teachers and pupils. Tables may be painted in pretty colors and arranged in artistic ways. Draperies may be hung at the windows, pictures on the walls, and other means taken to make the room interesting. In some schools art students have made mural paintings for the cafeteria.

By all means, comfortable chairs should be provided. The usual benches in cafeterias are neither inviting nor restful and they tend to encourage bad posture. Dishes that are beautiful in color and design may be obtained at a reasonable price.

### *Happiness Promotes Digestion*

The emotional attitude at table is of great importance. Everything that makes mealtime a period of happiness promotes good digestion. School authorities should try to make the lunch period one of the happiest times of the day.

3. *Allow pupils sufficient time to eat leisurely.* The procedure at luncheon in most schools is contrary to all health rules. The pupils, after having been under the strain of school work for a number of hours, rush out of their

*The food will taste better if the cafeteria has a name.*

*Surprise dishes with enticing names capture the children's interest.*

rooms to the cafeteria. There they stand in line several minutes before they can be served. Then there is barely time to eat a light lunch hurriedly and get back to work in the classroom. Nobody can defend a procedure that robs the child of all sense of leisure at meals and allows no adequate time for the recovery from fatigue.

When this problem is brought before the principal, he acknowledges the situation but excuses himself on the ground that it is impossible to assign more time for the lunch period without lengthening the school day; of course, that is unthinkable. It would mean turning the hands of the clock backward. As long as educators fail seriously to consider health as one of the foremost objectives of education, it is idle to discuss the matter further.

3. *Instruct children so that they may know how to make the proper choice of foods.* Nearly all children in our city schools learn facts about the anatomy, physiology and hygiene of digestion. They may recite facts about calories, proteins and vitamins, without that information having any effect upon their choice of foods either at the home table or in the school cafeteria. Psychology teaches that there is no marked correlation between knowing and doing. Mere knowledge, no matter how accurate and scientific it may be, is valueless unless it can be carried over into habitual action. The school cafeteria provides the opportunity for such behavior. Every child who eats his lunch at the cafeteria should have instruction in his hygiene class in choosing proper combinations of food at the lunch counter. He should have skill in the making of menus, but this training should connect directly with his reaction in the cafeteria. The classroom teacher may check up on the pupil's reactions by asking him to report for a time on the food he eats. Such matters should be handled with tact, or the antagonism of pupils may be aroused and no good accomplished.

4. *Make good food combinations in the cafeteria attractive.* Probably little is to be accomplished by telling boys and girls that certain things are good for them, but food may be made so attractive that children will be led to eat it. Reference has already been made to the value of making the cafeteria in general attractive. The same thing can be said about the way food is served. Vegetables, for example, may be served daintily in colored dishes. Surprises are always appreciated. For example, a salad combination called "Babe Ruth's Home Plate" was advertised in one cafeteria and had a big sale; likewise "Treasure Island chowder." Here is a field that offers much to the ingenious experimenter.

5. *Satisfy individual needs.* In every school are certain children who because of malnutrition or other handicaps need special help. In some of our best conducted cafeterias there is a trained person who can quietly and without outward show give helpful suggestions.

To sum up briefly, the cafeteria is not merely a place in which pupils are fed. It is an annex to the classroom. In it pupils should put into practice the facts they have learned about food. As a result of such training they acquire wholesome attitudes toward food and the ability to make the right choices.

## HEALTH TEACHING BEFORE HALLOWE'EN

HALLOWE'EN has always appealed to children. It lends itself to the unusual and the picturesque. It is the time when ghosts walk and whisper in the darkness. Jack-o'-lanterns leer from window and gatepost.

The fascination of Hallowe'en to children is due in large measure to its being a signal for the removal of repressions. "Don't" for a brief period of time no longer dominates behavior. Children in the form of phantoms may break window lights, street lights, carry away window blinds and other property and set fires. On the morning after Hallowe'en, streets and homes often look as if they have been struck by a hurricane.

On one street in my town every street lamp was broken by a party of young people who carried out their work of destruction systematically. Such lawlessness is not only a loss economically, but frequently it results in injury and loss of life. Shooting peas may seem to be a harmless diversion but careless shooting not infrequently leads to blindness.

The love of having a good time on Hallowe'en is a tradition that should be retained, but we need some new traditions and practices that will not encourage an interest in lawlessness. Schools may teach something about good fairies and spirits of Hallowe'en. Teachers may suggest to children and parents ways to have a good time. Often the school or the community can have an entertainment that will keep the children busy and happy in a safe and sane fashion.

## TEACHING HEALTH

*(In this column will be published each month concrete examples of good health teaching. Teachers are invited to send in contributions not exceeding 600 words and preferably less to the editor of this department. Illustrations of the actual work of children will be welcomed. Contributions accepted will be paid for but no manuscripts will be returned.)*

### GOOD HEALTH AND RIGHT LIVING

INVESTIGATIONS by Dr. Thomas D. Wood of New York City have shown that children are not interested in health in the abstract or as a future benefit. Working on this theory, the principal and teachers of the Balch School of Detroit carried on an interesting health project in their school covering a period of six weeks, thereby giving the children an opportunity to form good health habits.

The suggestive units, which were carefully worked out, covered the following phases of health education:

1. Eating for health and efficiency.
2. Exercising for health (indoor, outdoor and corrective).
3. Mental hygiene (right thinking in regard to health).
4. Clothing.
5. Cleanliness of person and surroundings.
6. Play in relation to health and right living.
7. Work in relation to health and right living.
8. Sleep and rest.
9. Educational facilities as an aid to good health and right living.

A large part of the project was home work, and in this way not only the children but the parents were being taught the fundamental health rules. Kindergarten children were given a letter to take home to their parents asking them to cooperate with the teacher in having the child drink the right

amount of water each day. A record of the number of glasses of water drunk each day was kept by the teacher. Those drinking the right amount for a certain period of time were awarded a flag on the health chart. This work was teaching an ethical as well as a health lesson.

The pupils of a sixth grade stressed correct breakfast menus. Each day the pupils brought from their homes the food listed by their teacher on the menu for that day. The breakfast table was set in the room by the children each morning. In this way the children were seeing as well as hearing about what they should eat for breakfast.

An eighth grade class made a study of milk. Their teacher took them to the Detroit creamery and the children were given first-hand knowledge of the pasteurization of milk. When the class returned to school, several pupils volunteered to make parts of a miniature creamery. They made a tank of cardboard similar to the one in which the milk was pasteurized, a cooling tank and cooling pipes and finally the machine for bottling the milk.

A properly ventilated sleeping room made in connection with the work on sleep and rest taught the lesson of sleeping with the windows open. Several parents reported that their children would no longer sleep with the windows closed.

Charts made in the lower science class showed where most of our foods originated. The pupils were surprised to find how few foods originated in North America.

The project culminated in the auditorium with various types of programs pertaining to health. A debate on the question "Resolved: That boys observe the health rules more carefully than girls" was particularly good. A fashion show was one of the unique ideas of a domestic arts class. From the standpoint of clothing, all phases of cleanliness, neatness and economy were stressed. This show was a part of the auditorium work.

The following health plays were staged for the benefit of all the children in the school: "A Health Circus"; "Health in Toyland"; "David and the Good Health Fairies"; "Mother Goose's Health Children"; "Mother Goose in Healthland"; "A Model Child"; "Pig Brother," and "Billy Boy."

A fine exhibit of the various types of work carried on during the project was shown in a separate display room. This exhibit was visited by a number of parents, supervisors, nurses and teachers of Detroit.

All those who had charge of the work were much pleased with the results and felt that the children learned a number of practical, wholesome health lessons.

The Detroit Dairy and Food Council, the Wayne County Tuberculosis Society and the Metropolitan Life Insurance Company of New York were especially helpful in giving materials pertaining to health.

B. A. SHEA,
Balch School,
Detroit, Mich.

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## FIXING THE TOOTH BRUSH HABIT

(A Fourth Grade Project)

THE following suggestions were made by forty-five students in Dr. Joseph Sudweeks' class in principles of education at Brigham Young University. The list was compiled by Dortha Taylor and Edythe Belliston.

*Information*

I. Teach importance of cleanliness by—
  1. Asking the children questions such as the following, to attract their attention:
    a. Of what are the teeth composed?
    b. What causes decay?
    c. Have your teeth ever ached? What caused them to ache?
    d. Would you like to hear a story about the teeth?
  2. Health stories. Stories should be told emphasizing cleanliness.
  3. Health booklets. Booklets made in different shapes to arouse children's enthusiasm —Japanese fan, sunbonnet baby, turkey, rabbit, Santa Claus.
    a. Paste health poems and pictures in these, showing bright, healthy children and sickly, dull children, and the causes of the differences in the groups.

II. Teach value of cleanliness to the teeth.
  1. Structure of teeth. Draw pictures of a healthy tooth and a decayed tooth.
    a. Explain structure and composition of teeth and the harm done by decay.
    b. Point out dangers that come through decayed teeth.
    c. Tell stories of teeth that have decayed through neglect.

III. Teach children the right and wrong foods.
  1. Structure-building foods—those rich in mineral matter.
  2. Foods exercising the teeth—those requiring much chewing.
  3. Foods that destroy the teeth—candies, sugar, etc.
  4. Make posters and charts of good foods to put up in the room. Have children bring pictures of foods to class.

IV. Miscellaneous activities.
  1. Have a dentist talk to the pupils about the care of teeth.
  2. Have pupils write a short theme on what the dentist said about the teeth.
  3. Have the pupils draw a tooth and name the parts.
  4. Have pupils gather outside reading material on the teeth; also clippings and pictures.
  5. Place charts and rhymes before the pupils, reminding them in various ways that the teeth should be well cared for. "Be true to your teeth or they will be false to you."
  6. Lead pupils to see and understand how much clean teeth help in the preservation of health, and that they are liable to disease through neglect of the teeth.
  7. Ask pupils to observe teeth of other persons.
  8. Have pupils compose verses about the teeth.
  9. Have them obtain bulletins relating to care of teeth.
  10. Impress upon children the need of good teeth and their importance in personal appearance.

V. Activities closely related to practice.
  1. Teach the proper method of using the tooth brush and a paste or powder for cleaning teeth.
  2. Teach the proper place and time for cleaning teeth.

*Practice*

  1. Sing health songs concerning care of teeth.
  2. Give demonstration of proper method of using tooth brush.
  3. Give each child a blank record to hang on the wall of his room on which to record his care of teeth.
  4. Organize a tooth brush club.
  5. Have a tooth brush crusade against "Jimmy Germ."
  6. Have children bring to language or reading class information about Indians' teeth.
  7. Have contests between groups in use of tooth brush and appearance of teeth.
  8. Obtain sample tubes of tooth paste and distribute among children.
  9. If necessary, have pupils use tooth brushes at school.
  10. Have reports every morning on the use of the brush.
  11. Have a Better Health Week and have children make posters on care of teeth.
  12. Have daily inspection of teeth.
  13. Have cards and pictures about the room as reminders.
  14. Have a story or talk each week on the subject, to keep up interest.
  15. Keep a record chart at school for recording credits for brushing teeth. Paste on gold stars for a week's perfect record.
  16. Get children to teach their smaller brothers and sisters how to brush teeth.
  17. Let pupils with the cleanest teeth have pictures taken of their smiles; hang these pictures in the schoolroom.

## NEW HEALTH BOOKS AND TEACHERS' MATERIALS

THE conquest of certain tropical regions by the United Fruit Company of Boston would make a splendid story for classes in hygiene. American business men looked longingly at the tropics with their great abundance of fruit, but danger and death lurked there in the form of disease and poisonous reptiles. There was only one way to get the tropics to yield their wealth and that was to make the tropics healthful. This adventure was carried out with great daring and scientific skill by physicians, nurses, sanitarians, dietitians and other health experts. Now the white man lives in the hot regions in safety.

The United Fruit Company has made available to teachers excellent material that considers the origin of the banana,[1] its history through the centuries, how it is grown and cultivated today and its value in the diet. Although the consumption of the banana has increased in America, it has always been a "bête noire" among fruits, largely because it has been eaten before it is ripe. That is true even today. Watch the people in a grocery or fruit store. Bananas that have thin skins and are flecked with brown are really ripe, and have the best flavor but these are usually shoved off in a corner and allowed to decay or are sold cheap. Those that are partly green and indigestible are being cut from the bunch and sold.

Dr. Walter H. Eddy of Teachers College, Columbia University, tells us that babies suffering from scurvy have eaten bananas without any digestive disturbance. The babies gained in weight and recovered fully from scurvy. Continuing he says: "In no case has a properly ripened banana, properly combined with other nutrients, been found harmful to children of even very tender years, and animal experimentation has confirmed these results." Mary Swartz Rose says: "Bananas may be regarded as a staple fresh fruit, high in fuel value, low in price and easy to prepare."

Bananas are nutritious food in naturally sealed packages protected from contamination, delicious to the taste and cheap. It is the duty of teachers to instruct their pupils as to their food value, when they are at their best and how they should be prepared.

TEACHERS who are looking for experiments in connection with their instruction in hygiene will find "Exercises in Science"[2] helpful. The text is especially adapted for beginners in science and is intended to be used with a descriptive text in science, "Open Doors to Science." With the aid of such a text pupils may make fire extinguishers, sand filters, test food, make oxygen and perform other interesting experiments.

HEALTH has been admirably correlated with nature study by Alice Jean Patterson in working out an interesting series of textbooks.[3] There are eleven volumes in all, four of them being notebooks. Health is introduced naturally and effectively into the study of nature. Interesting projects and experiments are provided. Teachers of nature study will find these books worth investigating.

EVERY person engaged in health education work needs to have a sound foundation in the principles of education. Two distinguished authorities in this field of applied psychology present us with a simple, clear, practical and up to date text.[4] Only a few pages are devoted specifically to health education but the remainder of the text treats subjects with which every teacher and educator should be familiar.

The keynote of the book is that of man as a worker of changes. "He changes the earth's form whether he merely scrapes out a hole in which to hide or removes mountains to join oceans. He changes its living beings when he destroys flies and breeds cows or when he exterminates weeds and cultivates corn. He changes his fellow men when he teaches or preaches, and he changes himself when he goes to school or joins the church. Whatever he may do he brings about, directly or indirectly, changes in the world which includes his fellow men and himself."

The work of the health educator is to work changes in people. He must change the minds of those who are ignorant and indifferent to their own physical and mental welfare so that they may acquire knowledge and keen interest. This valuable book will not tell you about the specific way to meet particular situations but it will help to guide your theory and practice.

THE authors of "Health and Physical Education"[5] have attempted to present a program of health and physical education in elementary schools. It is intended to be useful to those who are engaged in elementary teaching and those who are preparing to teach.

The book is sound and modern in its point of view so far as it goes, but in content it is conspicuous for what it lacks as much as for what it contains. About 200 of the 335 pages are devoted to physical education, but the material dealing with nutrition, the classroom teacher and mental health is quite inadequate. Getting the preschool child ready for school, the health of the teacher, the work of the school physician and school nurse receive almost no attention. The most disappointing part of the book deals with health instruction. It contains many pages of outlines taken from the Cleveland course of study but little that would help the teacher to develop a sound psychology of health teaching, methods to be employed, devices and sources to be used. As a textbook it lacks references for the student and exercises that might stimulate the student or teacher to experiment or become mentally active.

Evidently the authors are at home in the second half of the volume. It has a concreteness in which the first part is deficient. Activities in physical education are presented grade by grade and should offer the teacher definite help. We recommend this book as a reference book for classes in health education and also for teachers in service.

1. The Banana, Its History, Cultivation and Place Among Staple Foods. By Philip Keep Reynolds. Pp. 181. Houghton Mifflin Company, 1927.
The Food Value of the Banana. A Compilation from Recognized Authorities. Pp. 24. Research Department, United Fruit Company, Boston, 1928.
The Story of the Banana. By Philip Keep Reynolds. Pp. 24. United Fruit Company, Boston, 1927.

2. By W.H. D. Meier, Ph.D., and Lois Meier, A.M. Pp. 99. Ginn and Company, Boston, 1929.

3. Nature Study Health Education Series. By Alice Jean Patterson. McKnight & McKnight, Normal, Ill.

4. Elementary Principles of Education. By Edward L. Thorndike and Arthur L. Gates. Pp. 335. The Macmillan Company, New York, 1929.

5. By A. F. Meyers and O. C. Bird. Pp. 342. Doubleday, Doran and Company, New York, 1928.

# New Books *on* Health

*Reviewed by*
*Morris Fishbein, M.D.*

## THE COMMON HEAD COLD AND ITS COMPLICATIONS

By Walter A. Wells, A.M., M.D. Pp. 225. Price, $2.75. The Macmillan Company, New York, 1929.

IN THIS volume, which has a commendatory introduction by Surgeon General Hugh S. Cumming of the U. S. Public Health Service, people who suffer frequently from colds will find sound advice based on knowledge of human anatomy and medicine. The author even tells how to cure a cold, without, however, giving anything much beyond the time tried methods used by all physicians.

Dr. Wells' book is really a book of advice on the diseases of the nose and throat, dealing with the tonsils, adenoids, sinuses and throat. He is convinced that drafts are associated with the causing of colds, and that getting the feet wet may also be a contributing factor. He finds no particular value in the vaccines for the prevention of colds, and he feels that hardening of the body may be useful as a means of prevention.

The conclusions presented are: "(1) that one is destined to catch cold if his resistance has been so lowered by predisposing causes that it is unequal to the unfavorable action of the special exciting causes; (2) that to avoid a cold one must eliminate or as much as possible avoid the predisposing causes and one must accustom himself to the action of ordinary exciting causes, and build up a special resistance to the extraordinary ones, and (3) to get rid of a cold one should take care not to antagonize nature, but take measures which tend to assist her in her efforts to reduce the irritation due to the exciting causes and to repair the damages done which result therefrom."

## BACTERIOLOGY OF THE HOME

By Ava L. Johnson. Pp. 163. Price, $2.25. The Manual Arts Press, Peoria, Ill., 1929.

GERMS are everywhere, good ones and bad ones, and the average person knows little, if anything, about them. The author of this book considers the relationship of germs to the hands, to dishwashing, housecleaning, refrigeration, canning, milk and the care of the home generally. The advice is practical and the subject worthy of consideration. The chief use of the work is not for students of bacteriology at all, but for courses in home economics.

## PSYCHOLOGY AND INDUSTRIAL EFFICIENCY

By Harold E. Burtt. Pp. 390. Price, $3. D. Appleton and Company, New York and London, 1929.

THE APPLICATIONS of the results of modern scientific investigations to industry have meant much for the freedom of the workman from hazards, as well as for the efficiency of the job. The author of this volume is professor of psychology in the University of Ohio, and the material presented here constitutes the course that he gives in this subject.

The book is divided into sections on education in industry, methods of work, fatigue, monotony, environment, morale, accidents and efficiency of executives. A concluding chapter deals with the future of industrial psychology. The book is educational in its revelations of how much the application of industrial psychology to everyday work may accomplish for the individual and for industry. Rhythm, the speed of machines, dependency on memory, the importance of climate and illumination, and all of the small factors which have their reflection largely in human life are here given consideration and expression.

Here is a book that should be carefully read by every executive and every educator.

## INDIVIDUAL PSYCHOLOGY

By Erwin Wexberg, M.D. Pp. 415. Price, $4. Cosmopolitan Book Corporation, New York, 1929.

DR. WEXBERG is introduced as one of the most brilliant and constructive co-workers of Adler in Vienna. Adler's work, particularly the volume called "Understanding Human Nature," presents his views of the human organism as a thinking being in a simple and fairly easy understandable form. It seems to be questionable whether the work by Wexberg will do as much to clear the subject as to confuse it.

In this volume one finds a full discussion of the Adler conception of organ inferiority, of the relationship of sex to character. One of the difficulties of the psychologic approach seems here to be the adoption of the all or nothing theory, which is as reprehensible as a similar psychologic conception of human life. There are, no doubt, physical bases for most sexual disturbances. It is not necessary to insist that psychology explains everything.

In the discussion of neuroses and psychoses, Dr. Wexberg goes much farther than does Adler in any of his works, the latter limiting himself largely to the matter of education. The book is one that cannot be recommended to the general reader, but it will have great interest for the educator and for those interested in the problems of modern psychology.

## THE ADOLESCENT

By Sidney I. Schwab, M.D., and Borden S. Veeder, M.D. Pp. 358. Price, $3. D. Appleton and Company, New York and London, 1929.

TODAY the problem of what to do with our young people is disturbing greatly the minds of their parents, but the young people seem to know what to do with themselves and to be doing it. The period that used to be called adolescence seems to have disappeared entirely so far as mental life and sexual conditions of the individual are concerned, and many children of today go directly from puberty to adulthood. The adjustment of the physical side of the human body has not progressed as rapidly as that of the psychical side; hence, the adjustments that have to be made are disastrous in many instances.

In this volume Dr. Veeder explains the physical bases of human life in the period from puberty to adulthood, and Dr. Schwab carries on the story from the mental side. The book is a sound contribution, dealing little with theory and much with fact and observation. For this reason it contains no formulas and no certain solutions of insoluble problems. Unquestionably, the environment of the child and the forces that work upon him must modify his existence. The parents who want advice on how to bring these forces to bear on the child will find much that is useful in this work.

# Questions *and* Answers

*If you have a question relating to health, write to "Questions and Answers," Hygeia, enclosing a two-cent stamp. Questions are submitted to recognized authorities in the several branches of medicine. Diagnoses in individual cases are not attempted nor is treatment prescribed.*

### Suprarenal Glands

*To the Editor:*—What is the effect of an extra dose of adrenalin in the blood? Which nervous system controls the action of the adrenal glands? What happens to the adrenal glands when one is angry or afraid?

H. A. deW., Illinois.

*Answer.*—A dose of epinephrine (adrenalin) producing a concentration higher than normally found in blood causes a rise in blood pressure.

The suprarenal (adrenal) glands are controlled by the sympathetic nervous system, specifically the splanchnic nerves.

Anger or fright causes the glands to secrete more rapidly into the blood stream and this is said to stimulate muscular activity.

### Scars

*To the Editor:*—Will you kindly tell me by what method a scar can be removed from the face?

W. S., New York.

*Answer.*—The question as to whether or not a scar can be removed from the face without leaving another scar as disfiguring as the first hinges entirely on the nature and extent of the scar tissue.

Scars can be removed by surgical operation, by the x-ray, by radium and by freezing. In the vast majority of cases, however, complete removal of the scar, so that there is no evidence whatsoever left, is impossible.

### Age in Relation to Intelligence

*To the Editor:*—Will you kindly inform me at what age the human brain stops growing? If a 20 year old person has a mentality of a 16 year old person, is he classed as a feebleminded person?

T. J. C., Pennsylvania.

*Answer.*—The maximum weight of the human brain is acquired at about the age of 15. The increase of weight from birth to this maximum is due, however, to growth of supporting structures, blood vessels and other parts and not to any increase in the total number of nerve cells present at birth.

Mental tests such as the Stanford Revision of the Binet-Simon are planned on the supposition that the fundamentals of intelligence are acquired in normal American school children by the age of 16. Such tests do not include special information, which may be acquired later. Hence a 20 year old person who tests as 16 is adeqqate or normal. His intelligence quotient is 100. A 16 year old person testing as 16 will have an I. Q. of 100. But a 16 year old or older person testing as 8 will have an I. Q. of 50.

### Acute Follicular Tonsillitis

*To the Editor:*—What is acute follicular tonsillitis? What causes it? What makes one run such a high temperature in proportion to the apparent severity of the throat trouble? Is it a serious illness? Is there anything to do to prevent its recurrence?

R. C., Illinois.

*Answer.*—Acute follicular tonsillitis is an inflammation of the follicles of the tonsils. These are pockets that open on the surface of the tonsils. It is caused by infection, which accounts for the high temperature that often accompanies it. It is a severe illness but not usually fatal.

When there is a persistent tendency to recurrence of this trouble, the removal of the tonsils is often advised by the physician in charge.

### Marriage After Operation for Appendicitis

*To the Editor:*—I am planning to be married in about two months. My fiancé has trouble with his side and may have to have his appendix removed. How soon after an operation for appendicitis should he marry?

R. E., Maine.

*Answer.*—The length of time required to recover from an operation for the removal of the appendix is usually not more than three or four weeks but, in connection with marriage, one ought to allow a longer period. The best advice in this matter would be that of the attending physician and the operating surgeon who are thoroughly familiar with all of the circumstances in the case.

### Milk and Fish at Same Meal

*To the Editor:*—Much is being said about the health hazard of drinking milk with a fish meal. I am really wondering if it is dangerous to one's health to drink milk when eating fish. If it is objectionable, what is the chemical reaction that is dangerous?

O. R. F., Kansas.

*Answer.*—There is no scientific basis for the statement that milk and fish are incompatible as articles of diet. Fish is frequently cooked in milk and thousands of persons daily drink milk at the meal in which fish is one of the other foods taken.

### Reducing

*To the Editor:*—Are reducing tablets harmful? What would you advise as a good, harmless reducing method? I am 5 feet, 1½ inches tall, weight 120 pounds and I am only 16 years of age. I am too large from the waist down. Please tell me what to do and how much I should weigh for my height and age. My mother is 5 feet, 4½ inches tall, weighs 160 pounds and is 38 years old. What is her correct weight and also what can she do safely to lose?

D. J., Michigan.

*Answer.*—Some tablets that have been advertised for reducing purposes contain merely laxative ingredients but others contain thyroid substance, which is dangerous to use except under the careful direc-

tion of a competent physician. No one should take tablets of this sort except on a physician's advice.

At 16, the average weight of a girl 5 feet 2 inches in height is 114 pounds. This girl therefore is slightly overweight, a condition that physicians consider an advantage in a person at her age. She certainly is not in need of any reducing at the present time.

The weight of a woman 38 years old and 5 feet, 4½ inches tall, averages 139 pounds. The mother is, therefore, somewhat overweight. The best method of reducing weight is by careful dieting and judicious exercise.

### Milk as an Exclusive Diet

*To the Editor:*—Is milk a balanced diet for an adult who is not doing any physical labor? I have been told that it is, but I have read in a magazine that it is not. I have a friend who believes that milk is a balanced diet for an adult and I am afraid he will injure his health by not taking enough other food with his milk.

L. B. O., North Carolina.

*Answer.*—Milk is a balanced diet in that it contains all of the essential ingredients of a food except adequate amounts of vitamins C and D, but while it is the ideal food for the infant and young child, it is not, used exclusively, the best food for an adult. When taken as the sole article of diet, one would have to drink a large amount of milk to get the necessary nutritive matter to meet his needs.

A certain quantity of milk in the daily diet, ranging from 1 to 3 pints, is an excellent food for almost any adult but it should be supplemented with other foods.

### Enlarged Thyroid Gland

*To the Editor:*—What are the symptoms of an overdeveloped thyroid gland? What is considered a good treatment for such a case? I have been to a doctor for a thorough physical examination although I feel myself to be in perfect health, not having any pains or aches or anything to complain of. He said he thought my thyroid gland was overdeveloped (I have no swelling that any one can see) and that if so the only treatment is a complete rest, which would mean giving up my position.

I. C. C., New York.

*Answer.*—The overdevelopment of the thyroid gland, one form of which is known as exophthalmic goiter, or Graves' disease, presents several signs and symptoms. Usually there is visible enlargement of the thyroid gland, but not always. The enlargement may not be evident because of its being concealed behind the collar bone. Or the enlargement may not be pronounced even when the gland is overactive.

Hyperthyroidism usually first becomes evident in overaction of the heart, with rapid pulse and often a sense of palpitation; there is muscular disturbance (tremor) and, later, disturbance of the bowels, showing itself usually in looseness of the bowels. One of the late symptoms is protrusion of the eyes, which gives rise to the name "exophthalmic." Still later, there are often evidences of mental disturbance.

Early in this condition there is an increased activity of the chemical

changes constantly going on in the body, which are known as metabolism. Within the last few years methods have been devised for determining the metabolic rate and this is the most dependable evidence of hyperthyroidism in the early stages.

### Nausea after Brushing Teeth

*To the Editor:*—Invariably when I brush the back of my teeth I get an intense feeling of nausea and my stomach revolts. This happens in the morning, when the stomach is empty. This feeling has been occurring for several years. Will you please tell me just why it occurs and if there is anything that can be done for it? Are Hutchinson's teeth considered a hindrance socially? Can the disease be passed on by marriage to the children?

H. P. S., Connecticut.

*Answer.*—Nausea is frequent in some persons from any irritation of the back of the throat. One of the familiar methods of producing vomiting is to tickle the back of the throat with a feather or even by putting the finger down the throat. It is probable that in brushing the back of the teeth, a sensitive area has been irritated so as to produce nausea.

As to Hutchinson's teeth, it is now known that teeth of this type may result from conditions interfering with nutrition. They are not, therefore, an infallible sign of hereditary syphilis.

### Hiccup

*To the Editor:*—What is the cause and cure for hiccup?

W. T., Indiana.

*Answer.*—Hiccup is caused by an intermittent, sudden contraction of the diaphragm, the mechanism of which is complex. The impressions to the respiratory or breathing center may be peripheral or central. The impulses causing the movement—that is, the efferent impulses—are distributed through the phrenic nerve to the diaphragm, causing the intermittent spasm, and through the vagus nerve going to the larynx, causing sudden closure while the air is being rapidly breathed in.

Hiccup may have its origin in inflammatory disturbances such as inflammation of the stomach, appendix, pancreas and peritoneum, or in strangulated hernia. It may be initiated by direct stimulation of the diaphragm, as when hot substances are swallowed or when there is disease of the esophagus near the diaphragm, or the hiccup may be toxic in origin, as in gout, diabetes or chronic inflammation of the kidney.

Finally, there are cases in which the primary cause is in the nervous system as in epilepsy, hysteria or shock. It may be persistent in encephalitis, or inflammation of the brain.

It is impossible to discuss the treatment of hiccup in any such reply as this. Numerous remedies have been tried, sometimes with good effect, sometimes with no effect at all. Sometimes vomiting, washing out of the stomach, and strong traction of the tongue have been helpful. Not infrequently it taxes the knowledge and skill of the physician to the limit.

### Clinical Thermometer

*To the Editor:*—I abhor the idea of putting in a patient's mouth a thermometer that has merely been dipped in a glass of clean water. This is, I believe, the habit of some physicians in my locality. Is there a more sanitary, practical way of handling this?

J. L., North Carolina.

*Answer.*—Many physicians after washing the thermometer place it in a solution of formaldehyde or in alcohol. This is much better than simply washing it in water.

# *Frantic calls for the family physician!*
## *—tragic moments of suspense!*

TWO little children at play—one is "nurse." She takes a bottle from the family medicine chest and gives the other some "medicine" for an imaginary pain. It is a *poisonous antiseptic!* A piteous cry! Frantic calls for the family physician! A wild dash of the ambulance to the hospital! Tragic moments of suspense while the doctors heroically work to save her life.

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THE warning signs, "Stop, Look and Listen", have become merely a part of the roadside landscape to many an automobile driver. Heedlessly he passes ten, twenty—perhaps fifty of them—safely. At the fifty-first comes the crash.

Last year 8,383 persons were killed outright or injured in automobile accidents at grade crossings in the United States. There are about 235,000 grade crossings in the country; more than 93% of them are unprotected.

With millions of new automobiles on the roads each year, accidents at grade crossings are increasing at an alarming rate, for the reason that most of the States have no organized program for protecting motor traffic which must cross railroad tracks.

New York, under wise leadership, has shown how to solve the problem. Before the Empire State adopted her present plan, but 10 crossings a year, on an average, were done away with. This year, the first in which the railroads, the State and communities have co-operated—the railroads paying 50% of the cost, the State 49% and communities 1%—85 death-traps are marked for immediate removal. Next year New York hopes to eliminate 150 more of its worst danger spots.

Other States are becoming aroused to this terrible and needless destruction of life and property and are taking steps to prevent it. Canada, too, is taking action.

It will require many years to complete the work. It is estimated that it will ultimately cost twelve billions of dollars. But what railroads and States and communities ought to do is to begin at once with those grade crossings which should be abolished first.

Grade crossings are dangerous not only to automobilists and pedestrians, but to people who are traveling on trains. The first section of a limited train struck an automobile and killed two persons. The train stopped and the second section plunged into it, killing thirty-two passengers in the first section.

Wherever the law provides facilities for eliminating grade crossings, citizens should see that public officials perform their duty and abolish these death traps. Wherever the laws must be amended, people should meet the issue squarely and urge prompt action by legislative bodies.

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## Light Treatment for Thyroid or as a Tonic

*To the Editor:*—Our little girl, now 4 years old, had influenza and bronchial pneumonia a year ago. This left her weak and with badly diseased tonsils. Our doctor advised that she be given alpine light or violet ray treatments, which she has received two or three times a week from last May until the present time except for the months of July, August and September. She stood the tonsil operation the first of July in good shape, and was nearly free from severe colds during the winter. Several articles in HYGEIA have warned against excessive use of the light treatment but they did not indicate what injury might result. Is the warning to prevent a burn similar to sunburn or is there a possible danger other than this in continued use over a long period of time? Would the alpine light treatment taken by an adult for its tonic effect have an adverse effect on the thyroid gland? The thyroid trouble experienced was the type that produces an irregular and high pulse rate and an abnormal metabolic rate, the type about which the doctor said, "The use of iodized table salt is adding insult to injury." This condition was readily brought under control by medicine prescribed by the doctor. I have hesitated to take alpine light treatment for its tonic effect and as a preventive of colds for fear of stirring up the thyroid condition again. C. H., New Jersey.

*Answer.*—Under the control of a competent, watchful physician, bad results from light treatment can usually be avoided.

In view of the fact that children in institutions in which heliotherapy is practiced spend the whole day in brilliant sunshine week after week, under proper direction and care, it seems safe to try the light treatment.

Ultraviolet irradiation should be given only under a physician's supervision, as there are definite dangers in the excessive use of this treatment. It may lower the bactericidal power of the blood, if used daily over a long period of time. The red blood cells may actually be destroyed by excessive irradiation with massive exposures. It does not have any adverse effect on the thyroid unless a severe burning of the skin is produced.

As to the use of the alpine lamp for thyroid disturbance in the adult, the evidence is so inconclusive that we cannot advise.

Iodine should never be used for thyroid trouble in the adult, except on the advice and under the close direction of a physician. The questioner is right in hesitating in the use of light treatment.

### To Escape Hay-Fever

*To the Editor:*—Where can I get information as to districts in which a sufferer from hay-fever is immune from the disease? Is any portion of Florida—for instance, St. Petersburg—immune?

W. A. B., Iowa.

*Answer.*—Seasonal hay-fever is produced from the pollen of wind pollinated plants; therefore, there are practically no places in the United States free from plants that produce wind-borne pollen. Some patients have hay-fever from the pollen of one plant and some from the pollen of others. For this reason, a hay-fever patient may go to one section of the country and be free from hay-fever, and yet have it in another. It all depends on what pollen he is sensitive to.

For example, a patient who is sensitive to Bermuda grass only can go north of the Mason-Dixon Line and be free from seasonal hay-fever, or a patient who is sensitive to Russian thistle pollen, and lives in Amarillo, Texas, can go east of the Mississippi River and be entirely free from hay-fever. A patient whose trouble is due to the ragweeds, however, can find but few places in this country in which he will be free from hay-fever.

In Petoskey, Mich., about 30 per cent of those who suffer from hay-fever caused by ragweed pollen can have freedom from symptoms. There are a few places in the United States in which the pine tree is abundant over a large area, and in such a region there is practically no vegetation, such as grass or weeds, as the shade and the pine needles prevent its growth. Bethlehem, N. H., located in the White Mountains is one of these places and has long been a resort for asthma and hay-fever sufferers. Many patients who go there, however, do not find relief.

Some persons with ragweed hay-fever will find freedom in Florida, but as a rule not; probably not at St. Petersburg.

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### Diphtheria Carriers

*To the Editor:*—An acquaintance of mine was ill in the contagious hospital. She said she was a diphtheria carrier, and that this was what caused the illness, but that she did not have diphtheria. Is this possible?

R. C., Illinois.

*Answer.*—A diphtheria carrier is one who harbors the germs of diphtheria in the throat for a long period without manifesting symptoms of diphtheria. One ill of some other disease as well as one who is not ill at all might be a diphtheria carrier.


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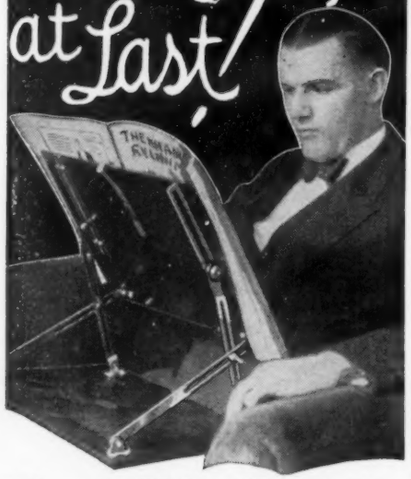

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## Sun Baths

*To the Editor:*—Would it be more beneficial to use the Alpine sun lamp under the directions of the family physician or to take natural sun baths in the summer? The patient has been in a nervous and rundown condition for the last two years. He has indigestion and is on a soft diet. Just now he is in bed for a rest treatment. Is calcium of benefit when taking sun baths? Should it be given by mouth or intravenously in cases in which the patient has a bad stomach? Do the sun baths given by lamp increase the hemoglobin of the blood?

B. E. K., Indiana.

*Answer.*—The best source of ultraviolet radiation is the sun. The use of artificial light employed indoors lacks some important accompaniments of outdoor solar exposure, such as moving fresh air with its effects on the skin and respiration and the warming of the skin with its production of a sense of stimulation.

As this is impossible during the winter in northern climates, the mercury quartz lamp is a good substitute if used under the direction of the family physician.

It is not necessary to take calcium while taking sun baths.

There is considerable difference of opinion as to the increase of hemoglobin by ultraviolet irradiation. Many workers find that short exposures to ultraviolet rays increase the hemoglobin and number of red cells less in persons in whom these are normal than in those in whom they are abnormally low.

## Soap; Baking Powder; Tea

*To the Editor:*—1. Is there really such a thing as naphtha soap? 2. Is alum baking powder harmful to the human body? 3. Is a good natural-leaf first-picking tea, such as the Japanese use, good for the nerves? People tell me this tea contains theine, which is a nerve soother.

D. A. W., Ohio.

*Answer.*—1. There is a soap advertised as a "naptha" soap but naphtha is not an important ingredient of the soap.

2. Alum baking powder is not injurious to the health.

3. The theine that tea contains corresponds to caffeine, which is contained in coffee. Most people find tea mildly stimulating, without bad results. Those who drink either tea or coffee to excess, however, often suffer from nervous symptoms resulting therefrom. "Excess" means in this connection an amount that is sufficient to disturb the particular individual. The effects of a certain quantity varies widely with different persons.


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GOMCO
VEST POCKET SYRINGE
STERI-CASE
ESPECIALLY FOR THE DIABETIC
*A compact Syringe carrying case assuring COMPLETE Syringe sterilization and a means of sterilizing the flesh.*
AT ALL SURGICAL SUPPLY STORES
The GOLDSTEIN MFG. CO., Ltd.
79-81 ELLICOTT ST. BUFFALO, N.Y.

*Representatives Wanted • Write Hygeia*

# The ultra-modern efficiency of Old Dutch assures HEALTHFUL CLEANLINESS—a safeguard to your family's health

**It is common knowledge that bathing is a health benefit through the removal of invisible impurities . . . the unseen enemies of health and beauty.**

The bathroom should, therefore, be free from impurities, invisible as well as visible. This is one of the principal benefits derived from cleaning the tub and washbowl with Old Dutch Cleanser. It keeps them constantly free from health-menacing invisible impurities, hygienically clean and safe.

But safeguarding your family with HEALTHFUL CLEANLINESS, although of utmost importance, is not the only helpful duty that Old Dutch performs.

The remarkable detergent properties and ultra-modern efficiency of Old Dutch, due to its fine, flaky, flat-shaped particles, relieve you of so much of the work of maintaining a spotless and always presentable bathroom. It is so easy, simple and convenient . . . to keep dirt, in all forms, under absolute control when you use the modern Old Dutch way. Just sift a little Old Dutch on a damp cloth . . . a few light strokes . . . and every sign of water stains, rings and soapy accumulations vanish . . . nickel, porcelain, enamel, tile, painted woodwork and walls sparkle and shine. And you experience a thrill of pride and satisfaction in knowing that everything is healthfully clean, as well as spick and span.

The use of Old Dutch exclusively, insures the beauty of your bathroom. Old Dutch contains no acid . . . no caustic . . . no harsh, scratchy grit. It doesn't scratch and it doesn't harm the hands or injure the nails.

There is TRUE economy in the employment of Old Dutch, because of its superior excellence . . . a little goes a surprisingly long way.

Old Dutch is the greatest advance in modern cleaning efficiency. Keep a can always handy in the bathroom.

*Your* HEALTH *Sir* !

# Try THESE DELICIOUS FIGS

## *at my risk and expense*

Here is a 'food treat' that is not only good, but good for you! **Big, delicious, juicy, skinless Texas Figs,** in a heavy syrup, one of the most healthful foods available—Nature's own.

A *doctor of Detroit, Michigan says of them, "that case of figs is worth more than a case of medicine," while another customer writes from Roanoke, Virginia, "these figs are just what I have been looking for."

If you would like to try these figs that others like so well, I will gladly send you, at my risk and expense, a case containing one dozen 13 oz. tins of the finest figs grown; big, plump, delicious and tender.

When the case reaches you, open a can, let the whole family try them as a breakfast dish or dessert. Then, if you want to keep them, just send me your check for $3.80 ($4.35 west of the Mississippi) to cover the entire shipment. If you don't think these are the finest figs you ever tasted—return the rest to me and you won't owe me a cent.

*Don't Miss This Real Treat*

*Simply fill in the attached coupon, and mail it while you think of it. I will ship the box the same day your order reaches me.*

* Name furnished upon request.

DELANE BROWN
1534 Guilford Avenue, Baltimore, Md.

Yes, you may send me, at your expense, your special package of one dozen tins of delicious, plump figs. After trying the contents of one tin, I will either return the rest at your expense, or send you $3.80 ($4.35 west of the Mississippi) in full payment within ten days.

Name.....

Address.....

City.....

State.....

Bank or other reference.....

# SAFETY EDUCATION *material*

ARE you interested in material for safety and health teaching for children?

Subscription $1.00 per year

## SAFETY EDUCATION MAGAZINE

contains practical lesson plans, posters, articles, plays, stories, news items and other valuable features. Is used widely in schools and communities throughout the country.

SAFETY EDUCATION MAGAZINE
ONE PARK AVENUE • NEW YORK CITY

## SOCIAL WORK DIRECTORY SPEEDS AID TO NEEDY

New York City, the biggest, richest and most important city in the world, with its heterogeneous and pressure-driven population, its congested tenement districts and innumerable other difficult conditions of life, has the greatest need for the alleviation of human suffering. A new directory of social agencies shows that the city is well equipped to meet many of the varied types of distress, though lacking in others.

The directory is issued by the Welfare Council, which is a federation made up of more than 700 welfare organizations. In addition to the local social service machinery, the directory shows that 283 national and international welfare agencies have their headquarters in the world's largest city.

The health problem of New York is handled in 263 hospitals, 1,410 clinics, 112 baby health stations, 36 health administration and education organizations, 27 nursing services, 67 institutions for convalescent care and 146 services for mental hygiene. In addition the directory lists 133 prenatal clinics, 120 dental clinics, 89 ear, nose and throat clinics and so on down the scale of twenty-five special services.

The directory shows 300 organizations engaged in family welfare work, 250 child welfare agencies and more than 300 organizations in recreation, education and neighborhood activities. About 6,000 persons are connected with the numerous agencies. Copies of this directory have been placed in libraries, at information desks, at railroad terminals and at social work information bureaus. It is expected that those who are frequently consulted by persons in distress will thus be able to put such persons in touch with immediate aid.

## GIVE HEALTH ADVICE THROUGH PICTURES

The present trend of newspapers toward profuse use of pictures has been cleverly adapted to health purposes by the Bellevue-Yorkville Health Demonstration in New York City in a four-page sheet devoted to health promotion. News pictures with a health angle are plentifully spread through the editorial matter, which consists of health news and advice about periodic health examinations. The most effective feature of a recent issue was a series of seven pictures showing some of the steps of a health examination; testing blood pressure, examination of heart and lungs with the stethoscope, blood tests, a test of vision and careful abdominal examination.

## *Free to Children*

A new, amusing booklet, "Wouldn't We Look Funny Without any Hair?" in colors, with pictures, telling

**Best Ways to Dress the Hair**

What hair is.
Why it needs care.
How to care for it.

Written for children to develop an intelligent interest in personal appearance. Approved by dermatologists and hair experts for the makers of

**Derbac**
**—a unique health shampoo—**

A free copy will be sent to each child whose name and address is given us. Ask your druggist for **Derbac,** or send 25c for a 20-shampoo cake to

**CEREAL SOAPS CO., Inc.**
**Dept. H-10, 334 East 27th Street, N. Y.**

CAMP TRADE MARK

## Maternity Supports

Scientifically designed in types of models for all figures, gives low abdominal uplift with no constriction.

Special feature—Original patented adjustment supplying sacro-iliac support and easy regulation to size and pressure as required.

Wonderful reaction to normal health, and mental and physical buoyancy.

*Write for special information.*

**S. H. Camp & Co.**
**Jackson, Mich.**
**Mfgs.**

Fisher & Burpe, Ltd., Manufacturers for Canada
Winnipeg, Manitoba

**F. & R.'s**
**GENUINE**
**GLUTEN FLOUR**

*Guaranteed to comply in all respects to standard requirements of the U. S. Department of Agriculture.*

Manufactured by
THE FARWELL & RHINES CO.
Watertown, N. Y., U. S. A.

**F. & R.'s**
**GENUINE**
**WHOLE WHEAT FLOUR**

*100%*
*Nothing added—Nothing taken away*

Manufactured by
THE FARWELL & RHINES CO.
Watertown, N. Y., U. S. A.

**F. & R.'s**
**GENUINE**
**GRAHAM FLOUR**

A real old-fashioned, honest-to-goodness Graham Flour; exactly like that made by Dr. Graham

Manufactured by
THE FARWELL & RHINES CO.
Watertown, N. Y., U. S. A.

**Representatives Wanted**
Write Circulation Dept. of Hygeia

# Growth

In deciding the child's daily diet, specialists are careful to prescribe right combinations of foods so that what is lacking in one is supplied by another.

Young, growing bodies need plenty of heat and energy producing food. White bread supplies this particular need in easily digestible form.

Food substances fall into a number of general classes: proteins, vitamins, carbohydrates, fats and minerals. All these are necessary for the normal growth and development of the human body. White bread, made with milk and yeast, is rich in proteins of high quality which facilitate the maintenance of nitrogen metabolism; it is rich in carbohydrates which supply heat and energy; spread with butter it contributes fat and, through the milk, provides vitamins and also calcium valuable for bone and teeth growth.

The food value of bread is beyond question.

*Send for* **"FACTS ABOUT BREAD"**

As one of the key people who direct the food habits of the nation, you are interested in knowing all "The Facts About Bread and Its Rightful Place in the Diet." Under this title we have published a book of authentic statements by eminent physicians, scientists and educators. We will be glad to send you without charge a copy of this booklet.

*The above statement has been submitted to and approved by a group of disinterested and competent investigators in the field of nutrition, selected by the editor of The Journal of the American Medical Association. These investigators include Professors Graham Lusk, E. V. McCollum and Lafayette B. Mendel.*

{ For complete information on nutrition see books written by these authorities }

COUPON

Dept. H–4109
Washburn Crosby Company,
Minneapolis, Minn.

Please send me, without charge, a copy of "The Facts About Bread and Its Rightful Place in the Diet."

Name.....

Address.....

City.....State.....

**BREAD *IS* THE STAFF *of* LIFE**

Copyright, General Mills, Inc., 1929.

This advertisement and the booklet "The Facts About Bread and Its Rightful Place in the Diet" are published by Washburn Crosby Company, millers of Gold Medal Flour, to assist in the broadcasting of authoritative information about bread.

# *Training the* Baby

WELL grounded health habits established before a child is three, are the basis of sound health throughout life. *Early training to the toilet is most important*; a child should be taught to recognize and take care of his own needs at a very early age.

"TOIDEY" AND STEPS

When baby sits alone *(usually between fifth and eighth month)* he should begin to use the "Toidey" with Foot Rest. Baby's feet should always be supported, and knees elevated.

As baby walks, "Toidey" Steps prove a great stimulus in interesting him to climb to his "Toidey"; to brush his teeth, wash his hands, etc.; also help him attain balance, poise and co-ordination. He develops self-reliance and learns to do for himself.

"TOIDEY" STEPS

***"Toideys" Fold for Carrying***

During all the pre-school years baby should have his "Toidey" wherever he goes, *so that he may always associate the function of elimination with it.* This is important for the maintenance of regularity as well as for baby's comfort and safety.

***Free To You!***

This new authoritative, scientific and understandable booklet outlines just how to go about training baby and developing proper toilet habits. *Write for it or ask leading dealers.* Tells all about "Toideys" ($3 and $5) and "Toidey" Steps ($6). *Ask also about "Comfy-Safe" Auto Seat (not a toilet) which locks to car and allows baby to ride in safety and comfort and "see out." ($5.50).*

**Juvenile Wood Products, Inc.**
Gertrude A. Muller, Pres.
**Box "R" Fort Wayne, Indiana**
*A company devoted to the scientific study and production of training aids for the child.*


## BRAILLE SYSTEM IS 100 YEARS OLD

The Braille system of writing and printing for the blind is 100 years old. In 1829 Louis Braille perfected the method of using raised dot characters which has opened the world of literature, music and education to those deprived of sight.

Braille was born in 1809 near Paris, the son of a harness-maker. It was in a harness-making shop that he lost the sight of one eye when a sharp instrument slipped and put it out. He afterward lost the other eye through sympathetic inflammation.

The blind boy became an excellent student at the school for the blind and soon became a teacher of history, grammar, geography, arithmetic, mathematics and the piano. His leisure time was devoted to the task of trying to find a system by which the blind could write. A French artillery officer published in 1825 a suggestion of embossing by means of a point method, the character containing twelve dots, six high and two wide. According to the story told in the *Red Cross Courier*, Braille believed this was the best system yet devised, but found that the letter was too long and unwieldy.

On this basis, Louis Braille produced the six dot character, which with slight modifications has been used ever since. Although students and teachers recognized that Braille's system was better than the one then in use, the National Institution for Blind Youth, in which Braille was a teacher, refused to change the old system. In 1854, two years after the death of its inventor, it was adopted at the Paris institution.

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## SILVER POLISH CAUSES CYANIDE POISONING

Poisoning from cyanide in a polish used to clean silverware has been reported from a number of widely separated hotels in New York and New Jersey and has led the New York state health department to begin a study to determine how widely cyanide compounds are used in public eating places.

The victims of the poison suffered from severe nausea and acute abdominal cramps, diarrhea and prostration lasting from about six hours to a day or more. One person reported having suffered twelve different attacks in a year while traveling in various cities. The attacks closely resembled food poisoning and it was only after careful investigation that they were traced to the cleaning preparation.


# You Need This-

*Complete Home or Office Gymnasium.* It gives you facilities at *home* for playful, health-building exercise—to strengthen weak muscles—to reduce flesh—to keep physically fit while indoors. Fits in 3¼ x 4½ ft. floor space—it is so compact. Durable tubular metal construction, attractively finished. Reasonably priced and easy payments.

**GYM JUNIOR** Patented
*The Home Gymnasium*
Hundreds have been purchased for homes, clubs, physicians' and dentists' offices, hospitals, welfare rooms, etc.
*Write for Literature*

Punching Bag
Rowing Machine
Chest Weights
Parallel Bars
Wrist Developer
Massager
Chinning Bar
Swimming Machine, etc.

FLOOR BARS FOLD UP WHEN NOT IN USE

**GYM JUNIOR CO.**
534 Gregory Ave.,
Weehawken, N. J.

# For those wayward thumbs

This soft, pliable, kindly little binder, fastened gently to baby's active chubby arms, does **just what it is intended to do and no more**—keeps the thumb or finger from quite reaching the mouth, and does not hamper movements or play in any other direction. Children become immediately accustomed to it and it is a wholesome way to ward off the whole train of baby ills—facial deformities, respiratory and throat troubles—that come with the thumb-sucking habit. Help your baby—try a

BOWERS KANT-FAYL ANTI-FINGER SUCKING DEVICE

If your dealer cannot supply you, order from us. Per set, $3.00

Little Rock Surgical Company
Donahey Bldg. LITTLE ROCK, ARK.

# FOOT SUFFERERS

Normal Foot

## SOMETHING DIFFERENT

3rd Degree Flat Foot

***New Invention Corrects Cause of Troubles, Nature's Way***

Corns, callouses, bunions, Morton's toe, bump foot, weak ankles, fallen arches are almost invariably the result of overstrain and fatigue which forces the bones of the foot into an unnatural position. Nature-Treads gently but surely aid in adjusting the misplaced bones of the foot arches by distributing the body weight to the natural weight bearing portions of the foot—truly Nature's own way. Light, flexible leather and fiber—no metal or hard surfaces. Not arch supports.

Just slip Nature-Treads in your shoes and walk with a new feeling of comfort and freedom.

*$3.00 per pair*

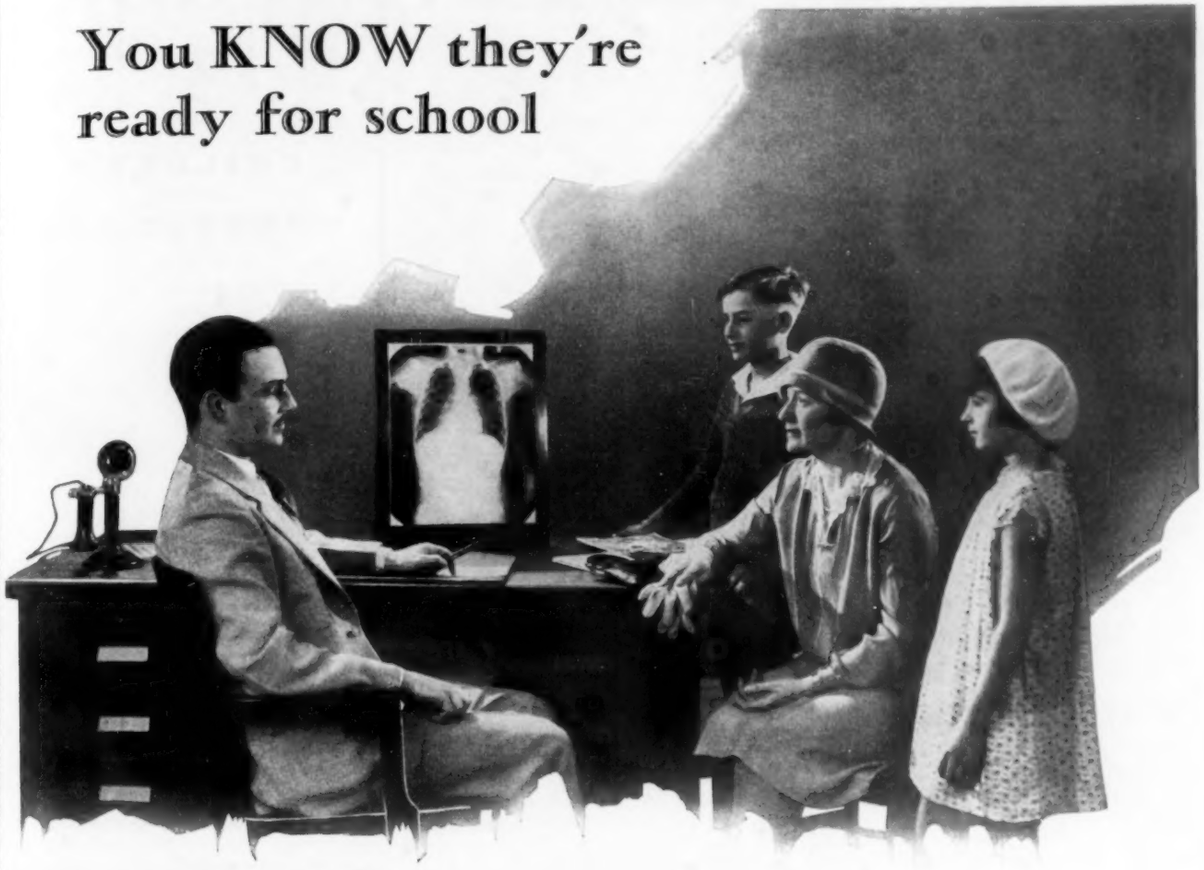
Ask your nearest shoe dealer or send direct to us for illustrated circular and measurement chart (sent free if you send your shoe dealer's name). Clip this ad.

**Nature-Tread Co.** of Ill.
655 S. Wells St. Chicago, Ill.

## *NATURE-TREADS*

Be sure you get genuine Nature-Treads—Name stamped on every pair. Use Nature-Tread Corn, Callous or Bunion Pads.

# You KNOW they're ready for school



JUST before school opens is the time when careful parents ask the family physician to give the children their periodic health examinations. For, after vacation they should be in the best of condition—unless some "silent sickness" is preying on them.

Too, many children are handicapped in their school work because of some subtle ailment which a health examination would discover and which could then be treated properly. Don't worry about your child. Have him examined. It's only fair to the child and yourself.

For a complete health examination your doctor will want to have x-rays made. This is not to add to the expense or because he is new-fangled but because x-rays indicate in many cases disease just as it is getting a toe-hold. Cooperate with your doctor and let him have x-rays.

EASTMAN KODAK COMPANY, 343 STATE STREET,
Rochester, N. Y.

Gentlemen:

Please send me "How X-rays Aid the Public."

Name.....

Street and Number.....

City and State.....

Clapp's
ORIGINAL APPROVED
BABY SOUP
AND
STRAINED
VEGETABLES

*The Badge of Health Foods*
In Sealed Glass Jars
**For Infant Feeding**
*TO SUPPLEMENT THE MILK DIET*
Prescribed by over 5,000 Specialists—

*Because* they are scientifically prepared under surgical standards of cleanliness and supply the elements needed for sound growth.

Used daily by thousands of Mothers—

*Because* they cost less than if made at home and save a Mother at least 24 hours a week kitchen time and give her these extra hours to be out of doors with baby.

*Because* they are easily carried, keep indefinitely when sealed, are ready to use except for diluting and heating and so are equally convenient for feedings at home or traveling.

**Clapp's Baby Soup.** An appetizing combination of Beef Juice, Vegetables and Cereals.

**Clapp's Wheatheart Soup,** a combination of Vegetables, Cereals, and the Wheat Germ which supplies Food Iron and VITAMINES A and E abundantly.

**Clapp's Strained Vegetables**
Spinach, Carrots, Asparagus, String Beans, Peas, Beets, Tomatoes, Prunes and Apricots.

Are all scientifically prepared from carefully selected materials, especially for growing babies and are immensely liked by them.

These are simply wholesome, healthful foods, packed for convenience and economy in 4 oz. glass jars—Soups, also in 14 oz. jars.

*Ask Your Doctor*
*and write us for your Dealer's name*
HAROLD H. CLAPP, Inc.
1340 University Ave., Rochester, N. Y.


## ENVIRONMENT IS FACTOR IN HEART DISEASE

Studies of children with heart disease indicate that approximately 1.5 per cent of the children attending public schools in the United States have some form of heart disease. More than 90 per cent of these children have acquired this disabling condition through preventable diseases.

Rheumatic diseases, which include the varied forms of articular rheumatism, muscular rheumatism or growing pains, chorea or St. Vitus' dance and tonsillitis, are the principal causes of heart disease, according to Dr. Harrold A. Bachmann, who writes in the *Public Health Nurse* of the measures that may be taken to prevent the tragedies of the impaired lives of these children.

Physicians find that rheumatism and the resulting heart disease are rare in their private practice, but are relatively common in dispensary practice. These facts indicate that environment is important. That is, in homes of comfort and intelligence, children are carefully watched and promptly cared for, while in the poorer groups they are neglected.

Prevention of heart disease involves alertness and attention to the aches and pains of childhood, Dr. Bachmann observes. Rest in bed is the best known treatment for the rheumatic child.

Foci of infection, such as diseased tonsils and adenoids and decayed teeth, demand prompt attention. The infection may not be entirely eliminated by their removal, but the danger is decreased.

Dr. Bachmann concludes with the statement that rheumatism in the child should be considered an environmental problem and an appreciation of this fact will net greater returns than any other single factor.

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## PELLAGRA INCREASES IN OKLAHOMA

Although the cause of pellagra has been established and the remedy found, the disease is still prevalent in some sections. The bulletin of the Oklahoma health department reports that 314 cases were discovered in that state in a period of four months.

Pellagra is caused by a diet deficient in vitamins. It is usually found among poorer people whose diet consists largely of salt pork and starchy foods. Wherever the diet has been changed to one in which lean meats, milk and legumes were more prominent, it has been found that pellagra almost entirely disappeared.

**CHILDREN**
**WHEN**
**HOUSEBOUND**
can have the time of their lives, entertain themselves gloriously,
and
give mother a chance to rest if they have

The Busy-Kiddie
TRADE MARK

As one mother put it,
"Cheap at three times its price."
Beautifully illustrated folder free.

**Standard Pressed Steel Co.**
**Makers of "Busy-Kiddie"**
**Jenkinstown, Pa.**
**Box 504**

SAVO AIR MOISTENER

**Saves Furniture, Pianos, Paintings, Plants, and Makes Air More Healthful**
Fill with water, hang on back of any Radiator out of sight. Others for all types of Hot Air Registers and Pipeless Furnaces. Ideal for Homes, Offices, Schools, Hospitals, etc. Six sizes. Write for FREE Booklet.
SAVO MANUFACTURING CO.
Dept. X-10, 111 W. Monroe St., Chicago, Ill.

**Are You Interested**
in a
***SAFE* and *SANE***
**PHYSICAL EDUCATION PROGRAM?**

We advocate not "Fads and Fancies" but a practical scientific and educational program.

Why not join this Association and thus increase the possibilities for good work in physical education?

**REGULAR MEMBER, $5.00**
**SUSTAINING MEMBER, $10.00**

These memberships include the receipt of the AMERICAN PHYSICAL EDUCATION REVIEW, the only official magazine on physical education published in the United States.

Write for sample copy of the Review, application blanks and information to

**AMERICAN PHYSICAL EDUCATION ASSOCIATION**
**Box G, Highland Station**
**SPRINGFIELD, MASSACHUSETTS**

# FOOD FOR THOUGHT ABOUT THE FOOD FOR BABIES . . . . .

THE purest of milk does not always agree with all babies. The milk is frequently curdled by the natural acids and enzyme rennin in the stomach—resulting in colic regurgitation or the passing of undigested curds—preventing the body from receiving the full nourishment of milk.

It has been proved by research (and the fact is widely recognized by the medical profession) that the addition of 1% Knox Sparkling Gelatine, dissolved and added to the milk, will largely prevent curdling in the stomach and thus greatly increase the nourishment received from the milk.

There is nothing in pure gelatine that will in any way be injurious to any baby either sick or well. But precaution should be taken to use only the purest of gelatine. Knox Sparkling Gelatine has been the accepted standard for nearly forty years. It is a protein in its purest form—has the same neutrality as milk. It is real gelatine—does not contain acid, flavoring and coloring matter. Specify Knox when you prescribe Gelatine.

***The following is the formula prescribed by leading authorities in infant feeding:***

*Soak, for about ten minutes, one level tablespoonful of Knox Sparkling Gelatine in one-half cup of milk taken from the baby's formula; cover while soaking; then place the cup in boiling water, stirring until gelatine is fully dissolved; add this dissolved gelatine to the quart of cold milk or regular formula.*

*May we send you reports and scientific data?*

MRS. KNOX, CHARLES B. KNOX GELATINE CO.
119 Knox Avenue, Johnstown, N. Y.

Please send me a copy of your new recipe book. I shall also like to have the special booklets (check booklets desired).

( ) Electrical Refrigerator Recipe Book; ( ) Varying the Monotony of Liquid and Soft Diets; ( ) Diet in the Treatment of Diabetes; ( ) The Value of Edible Gelatine; ( ) The Health Value of Knox Sparkling Gelatine; ( ) Reducing Diet; ( ) Recipes for Anemia.

*Name* .....

*Address* .....

***The booklets will prove extremely interesting and helpful to you. Please send for them.***

Nonspi.
AN ANTISEPTIC LIQUID

Keeps Your Armpits Dry and Odorless

THERE is no excuse in allowing armpit perspiration to discolor and ruin your clothing, and its disagreeable odor to humiliate and embarrass you.

More than a million men and women keep their armpits dry and odorless and protect their clothing with NONSPI (an antiseptic liquid) used, endorsed, and recommended by physicians and nurses.

*NONSPI destroys the odor and diverts the underarm perspiration to parts of the body where there is better evaporation—and need be used on an average of but two nights each week.*

You, too, can have dry and odorless armpits and save your clothing. Get a bottle of NONSPI today. Use it tonight. Use NONSPI the year around—spring, summer, fall, and winter.

Your Toilet Goods Dealer and Druggist has NONSPI at 50c (several months' supply) or if you prefer

FREE TESTING SAMPLE SENT ON REQUEST

THE NONSPI COMPANY
2673 Walnut Street
Kansas City, Missouri

*Send free NONSPI sample to*

NAME_____

STREET_____

CITY_____

TRADE NONSPI MARK


## WILL MEN CHANGE THEIR STYLE OF DRESS?

Men live in a self-produced tropical climate within their clothing summer and winter, says Donald A. Laird in an article in the *Scientific American* on men's clothing.

The temperature within the clothing of the average man is 87.8 F.; for women's clothing it is only 80.6. The humidity inside men's clothing is 70 per cent and for women it is only 55 per cent.

Further indictment against men's thick and heavy clothing is in the fact that it excludes light and air, says Dr. Laird. Wool is only about half as transparent to ultraviolet rays as white cotton. It is far better to get a continual mild exposure to these important rays through proper clothing than to take an overdose at one time, as on the seashore with the sunburn that usually results from the first exposure.

Tight collars, garters, long underwear and lined clothing also come in for condemnation from Dr. Laird. Tight collars constrict the blood vessels that carry blood to the brain; garters likewise hamper the blood stream. The long underwear and heavy outer clothes cut off light and air, with the result that only the face and hands of men are exposed to their benefits.

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## FLOOD OF 1927 INCREASED COUNTY HEALTH UNITS

Fifty-three counties or districts comparable to counties established full time health units during 1928, the U. S. Public Health Service reports.

The practical value of organized county health service was remarkably demonstrated during the Mississippi flood of 1927 and this disaster gave an impetus to the movement that resulted in many new units in the southern states.

Experience shows that agencies concerned with special activities such as typhoid fever prevention, hookworm control, malaria control, venereal disease prevention or child or maternity hygiene can perform most efficiently by combining with local official service in a well balanced program.

Rural health service throughout the United States would cost about $20,000,000 a year, while the national loss caused by preventable sickness is estimated at more than a billion. Money invested for public health service yields to the public welfare more than any other dollar obtainable by taxation can be made to yield in normal times, studies made by the Public Health Service show.

## DIET IN TUBERCULOSIS

Thirty-six tuberculosis specialists were recently asked eight questions about diet for tuberculosis patients. According to a summary of the replies, reported to *The Journal* of the American Medical Association, by Dr. J. B. Hawes, 2d, these physicians believe that:

1. Lunches between meals are rarely advisable. The average patient enjoys his food more and takes a larger amount of nourishment when he confines himself to three good meals a day.
2. Eggnogs in any form are likely to upset the digestion.
3. Raw eggs, if easily borne and if the patient is underweight, do not do any harm and may do good. They are not so digestible as cooked eggs and on the whole are rarely indicated.
4. About 1 quart of milk daily, four or five glasses with meals, is the maximum amount that can be given. A glass of milk with each meal is usually sufficient.
5. There are no special foods that need be emphasized. Fruit and vegetables will help correct constipation; they contain vitamins but little if any nourishment. Potatoes, marcaroni and rice have much food value.
6. The bowels should move at least once daily. A mild laxative once a week is often a valuable help if the diet with plenty of roughage is not enough.
7. Five or six glasses of water daily are advisable in every case.
8. A rest before and after each meal is essential.

## TAKE MOTION PICTURES OF BODY FUNCTIONS

Moving pictures of the internal functions of the body are now possible through a special x-ray camera devised by two physicians, a surgeon and a roentgenologist, in a Detroit hospital, according to an account in *Hospital Management*.

The motion of the lungs, contraction and expansion of the bronchi, movement of the heart and intestines, the passage of solids and fluids through the stomach and intestinal tract can all be shown by the "x-ray movies" and thrown on a screen by an ordinary projection machine.

The new camera has been under development for more than a year. It is operated by a crank, one turn of which advances the film band, clamps one section of this film band between intensifying screens, automatically exposes this section by an electrically operated timer, releases the clamping intensifying screens from the film band and again advances the band.

protect him *with*

# Nason's Cod Liver Oil

LET him have the energy, the endurance that good cod liver oil will help to supply. Here's one with an agreeable flavor. NASON'S! He'll take—without resistance—this better-tasting kind!

NASON'S Cod Liver Oil enjoys widespread approval by physicians. For its purity! For its high quality! The cod are caught in freezing temperatures in the Arctic waters off the Lofoden Islands, Norway; the oil immediately extracted and carefully refined in NASON'S own nearby plants. In the American Laboratories of the Tailby-Nason Company each lot is biologically tested and flavored. Its vitamin potency is warranted.

You'll want to receive a sample. Just fill out the coupon.

***Nason's palatable cod liver oil complies with the U. S. P. standards for cod liver oil. In addition, it is required to have a content of fat soluble vitimin A, determined by the U. S. P. method, of not less than 800 units per gram, and an antirachitic potency such that 0.01 Gm. per day will produce definite healing (as determined by x-ray photographs) in the leg bones of rachitic rats in eight days when added to a diet lacking in vitamin D, the rats being also deprived of ultraviolet light.***

**Nason's**
Palatable-Norwegian
**Cod Liver Oil**
*The Better Tasting Kind*

TAILBY-NASON COMPANY
KENDALL SQUARE STATION, BOSTON, MASS.
Pharmaceutical Manufacturers to the Professions of Medicine and Pharmacy since 1905.

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(H. 10-29)

*My Druggist's Name*.....

The PARENTS' MAGAZINE
ON REARING CHILDREN FROM CRIB TO COLLEGE
Hand-Picking Children's Friends
Does Behavior Depend on Health?
Toys for Travelers
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These are just a few of the many subjects treated in THE PARENTS' MAGAZINE — *the only publication* devoted exclusively to the rearing of children FROM CRIB TO COLLEGE.

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HY10

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The SUPER-SIEVE★ Rotary Colander

***Baby's First Solid Food!***

Now it's easy to sieve cooked fruits and vegetables. Just pour them piping hot into the Super-Sieve Rotary Colander. Rotate handy hard wood roller and food comes through QUICKLY in smooth, puree form—just right for baby's first solid food. Saves time and labor. A remarkable Combination Colander, Sieve, Ricer, Fruit and Vegetable Press with many DAILY uses. Approved by Good Housekeeping Institute. At stores or by mail $1.50. Fully guaranteed.

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End this habit and prevent protruding teeth, facial deformities and other harmful effects.

Dr. Thompson's Sanitary Rings permit perfectly normal use of thumb or finger. Free brochure explaining evils of habit. Enclose $4.50 for two Sanitary Rings, plus 15c postage. State age of child.

**CHILD WELFARE DEPARTMENT**
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• • • ***SUBSCRIBE NOW FOR HYGEIA!*** • • •


## ANALYZING LEISURE TIME OF WORKERS

Rest and recreation are constantly receiving emphasis as basic factors in good health. This interest is evidenced especially in the provision of facilities for rest and play for the working man. As part of the observance of an annual health week the Western Electric Company distributed charts by which its employees could analyze their state of health. The chart on rest and relaxation used the following questions:

1. How many hours of sleep did I average last week?
2. Do I feel invigorated when I wake?
3. Am I having sufficient sleep each night?
4. At what intervals do I relax?
5. Do I feel refreshed after relaxation?
6. How does my relaxation fit me for greater and more sustained effort?
7. How have I organized my leisure time to derive most benefit from it?
8. What vital and satisfying interests do I have outside my work?
9. What are my hobbies?
10. In what way does my recreation afford me a change of activity?
11. In what respect can I improve my physical capacity and mental outlook through better organization of my leisure time?

## HOW TO CHANGE BED FOR INVALIDS

Bed linen on a sick person's bed should be changed daily if possible. The United States Public Health Service gives the following directions for changing sheets without uncovering the patient.

The patient should be rolled over to one side of the bed, the soiled sheet folded in narrow pleats adjusted to the mattress as close to the patient as possible and well tucked at the side and the unfolded part at the head and foot. The patient should then be rolled to the other side, the soiled sheet withdrawn and clean sheet pulled into place, smoothed, freed from wrinkles and tucked tightly in on that side and at the head and foot of the bed.

To change the top sheet without uncovering the patient, loosen the soiled sheet at the foot, fold the clean sheet and tuck in securely at the bottom, then draw this clean sheet over the patient between the soiled sheet and blanket, put on the spread, fold the clean sheet over the blankets and spread, adjust the pillows and then gently withdraw the soiled top sheet.

## MAIL ORDER GLASSES ENDANGER EYES

Thousands of persons are endangering their eyesight by using spectacles bought from unscrupulous mail-order houses that sell through the mails. This is the warning sent out by the National Society for the Prevention of Blindness and the National Better Business Bureau.

These mail-order houses, which advertise in newspapers and magazines, sell glasses without in any way testing the eyes. The glasses are a fair grade of magnifying glass mounted in an extremely poor grade of frame, not "scientifically ground and curved lenses," as they are advertised. They do not relieve eyestrain; they do not fit any eyes except by chance.

The most serious aspect of the question, says the society, is that many disease conditions which may result in complete blindness first produce disturbances that are temporarily corrected and therefore concealed by glasses. Thus a serious disease may be overlooked until it is too late to prevent blindness.

Mail-order courses in "eye exercises" are also scored by the society. It is true that the medical profession sometimes prescribes certain exercises, but only after complete eye examinations, supplemented by a general physical examination. The dangerous advice "Throw away your glasses" may result in serious eyestrain and may even cause profound disturbances of the nervous system.

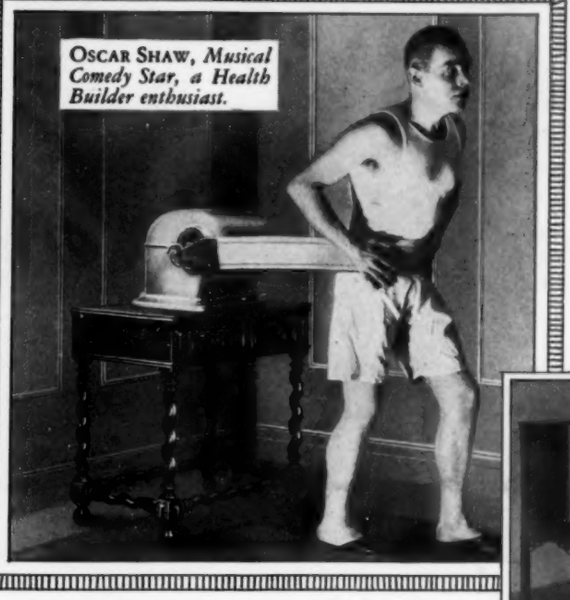
---

## DIPHTHERIA INCREASES IN FALL MONTHS

The diphtheria season lies just ahead, the health bulletin of the Illinois state department of health warns citizens of that state in a statement declaring that the outlook for the present year is the most unpromising in seven years. Deaths from diphtheria through the first eight months of 1929 rose 20 per cent above the corresponding period in 1928, the bulletin says.

Whether the unpromising autumnal prospects develop depends on the attitude of parents of susceptible children, the health officer points out. Toxin-antitoxin given from six weeks to six months ahead of exposure makes susceptible children immune. It is already late for immunizing against danger this fall, but toxin-antitoxin begins to take effect at once and each day finds the child protected in larger degree until complete immunity is established.


# KEEP FIT in 15 minutes a day



OSCAR SHAW, *Musical Comedy Star, a Health Builder enthusiast.*

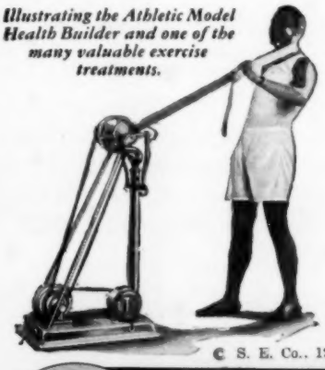
DOROTHY KNAPP, *world-famous beauty, says, "I unhesitatingly recommend the Health Builder to everyone interested in keeping radiantly healthy".*

NEVER before has health been so important an asset for business and social success as it is today. Never before has the pressure of modern living put such a strain on physical condition. You simply *must* KEEP FIT—without waste of time or effort.

### *Oscillate Your Way to Health*

There is only *one* way to keep fit—DAILY physical exercise. Science now makes this possible, and in a most enjoyable, simple new way. Just 15 minutes a day of invigorating massage and vibratory-exercise with the famous Battle Creek Health Builder, manufactured under the patents of Dr. John Harvey Kellogg, awakens each tiny capillary into new activity, stimulates the perspiratory and sebaceous glands, vigorously massages the heaviest muscles, helps eliminate dangerous body poisons, and aids in general reduction of body weight.

*Illustrating the Athletic Model Health Builder and one of the many valuable exercise treatments.*



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### *The Result of Years of Development*

No other appliance can produce the same effects as the Health Builder. Improved year by year, as a result of long study and research by an eminent physician, the action of the Health Builder is perfectly synchronized with human muscle tone.

### *A Health Builder for Every Requirement*

Ideal for home use is the Universal Home Model, a compact, enclosed Health Builder. The Athletic Model is very popular for clubs, home gymnasiums, colleges, health centers, institutions, steamships, etc., while the handsome De Luxe Cabinet Models combine utility with distinctive beauty.

### *Health Facts for You—FREE!*

Send at once for "Keeping Fit in Fifteen Minutes a Day"—a valuable FREE book showing how the Health Builder keeps you fit. Health should come *first!* Write for your copy—NOW!

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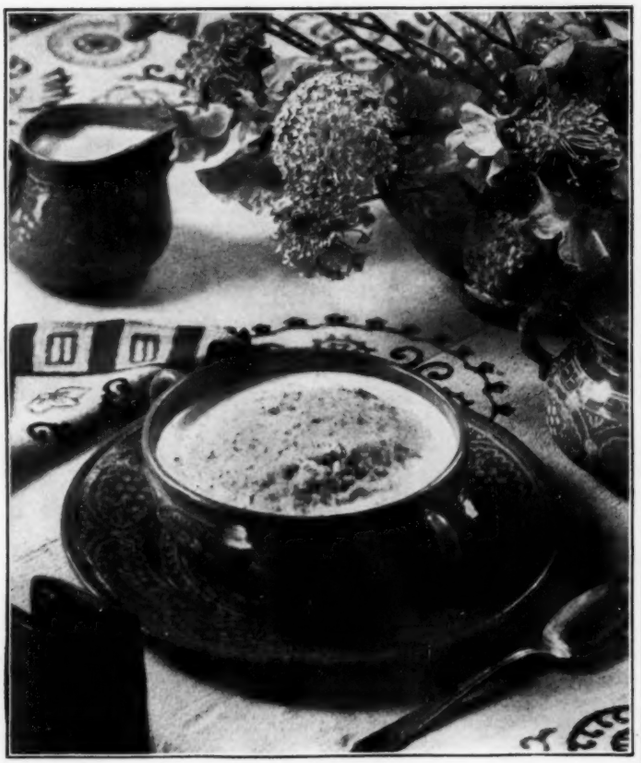
**The Battle Creek Health Builder Keeps You Fit!**

*Vita-Wheat, the Vitamin Porridge. Gluten, food lime and iron builds sturdy bodies and alert minds. Featured this week at all Health Food Centers.*



# Here's a porridge your children will *love*

CHANGE to Vita-Wheat if you would see what a warm breakfast can do for your children.

At Battle Creek, specialists in diet have developed this vitamin-rich cereal especially for children. Made from the choicest part of the wheat, the body-building elements are all there.

By pre-parching or toasting, a rare flavor is imparted that children love. With malt sugar and cream or milk, you have a breakfast porridge that cannot be surpassed in delicacy of flavor and downright nourishment. Vita-Wheat is ready to eat in a very few minutes.

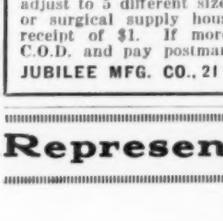
Your local Health Food Center—usually the leading grocer—has Vita-Wheat and all of the other foods in the Battle Creek line.

**BATTLE CREEK SANITARIUM HEALTH FOODS** *for Everybody*

**Free Diet Service**

At Battle Creek we maintain a staff of graduate dietitians to advise you on any diet problem. If you will write to Ida Jean Kain, our chief dietitian, she will send you suggestions for your particular diet. "Healthful Living," a most interesting and helpful book written by a leading nutrition expert, will be sent free if you write your name and address on the margin of this ad and send it to us. It describes with recipes many of the foods used in the Battle Creek Diet System. THE BATTLE CREEK FOOD CO., Department 97, Battle Creek, Michigan.

Ask about Savita, Protose, Malted Nuts, Fig Bran, "ZO" and Bran Biscuit.



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**$1.00 Pair**
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A safe, easy, kindly way. Invaluable if suffering from Eczema or other skin disease. Allows free movement, even considerable bending of elbow. Loose fitting, light, sanitary, cool. Snap fasteners, adjust to 5 different sizes. Handy. At drug or surgical supply houses, or postpaid on receipt of $1. If more convenient, order C.O.D. and pay postman $1.10 on delivery.

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Reprinted for expectant mothers from the series in "Hygeia"

*Symptoms—Exercise Diet—Clothing* **25c** American Medical Assn. 535 N. Dearborn St., Chicago

**Representatives Wanted**—*Write Hygeia*


## WHY LINCOLN HAD MELANCHOLIA

Dr. Thomas Hall Shastid, author of the very engrossing little pamphlet, "Our Own and Our Cousins' Eyes," published some time ago, contributed an article called "My Father Knew Lincoln" in a recent issue of the *Nation*. Dr. Shastid's father, too, was an ophthalmologist.

The article contains the following interesting commentary on Lincoln's eyes: "There was one point that my father had noted about Lincoln's physiognomy that I have never seen recorded. It was that the left eye, from time to time, looked queer and then suddenly 'crossed'; i. e., turned up. At the time when my father told me this it did not strike me as having the least importance. Older grown, however, and become an oculist, I was struck one day by the recollection and then by the meaning of the fact itself. Lincoln had been the victim of hyperphoria (a tendency of one eye upward) with, now and then, a momentary hypertropia (actual turning of one eye upward). Such a condition, as all oculists know, gives rise to an intense form of eyestrain and is one of the commonest causes of deep and protracted melancholy—the chronic, inexpressible blues. Here, then, was the probable explanation of the well-known Lincolnian depression of spirits which lasted, off and on, until his death."—*The News Letter*, National Society for the Prevention of Blindness.

## FIND TULAREMIA IN RUSSIA

For several years after tularemia was identified as a disease entity, it was thought to be strictly an American disease. In 1926 it was found to be identical with a disease in Japan long known as Ohara's disease. Now reports from Russia describe three outbreaks of tularemia, involving more than 1,000 cases.

The Russian cases revealed an entirely new source of infection—the water rat. The fur of this rodent is greatly valued and when floods in the spring of 1928 drove rats ashore the natives welcomed the opportunity to catch them, according to a discussion in *The Journal* of the American Medical Association.

It is customary to catch the water rats by throwing a slender barbed harpoon which enters the body of the animal easily but is withdrawn with difficulty. Consequently the hands of the harpooners are bathed with blood, thus providing an ideal source of infection.

## AIR-GROUND CODE AIDS FLOOD VICTIMS

A message code to be used between aviators and persons on the ground recently perfected by the Red Cross and the Army Air Corps was used for the first time in relief work during the spring floods which inundated large areas in the southeastern states.

Marooned disaster victims were enabled to signal what they most needed in the way of food, medical supplies, clothing and blankets, but only after a serious difficulty had been overcome. They did not know the code.

To meet this situation the Montgomery (Ala.) *Advertiser* printed special editions carrying the code, and these were taken by airplanes and dropped to the stranded people.

During the six days when the flood was at its highest, the planes from Maxwell Field at Montgomery made 296 flights, almost fifty each day, to deliver supplies and ascertain the wants of the population, which was completely cut off from communication with the outside world except for the air-ground code, says the story told in the *Red Cross Courier*.

The utility of such a code had been demonstrated during previous disasters and its practicability on a large scale was amply proved by its use throughout the operation in which the airplanes assisted.

---

## SHOW HOW FOREIGNERS DRESS NEW BABY

Infants dressed according to the native customs of several foreign countries made up an interesting feature of the sixth annual conference of midwives in New Jersey recently.

A child of Russian Galicia wears four diapers, representing the swaddling clothes of the Christ Child, until he is christened, after which ceremony he is dressed for the first time. At all times he is bound tightly in a feather pillow.

In Bohemia the baby wears a muslin shirt, two heavy diapers binding the body and feet and a yellow lace-covered military coat. He is then bound into a feather pillow of yellow, covered with lace and tied tightly with yellow ribbon. This baby was supposed to have been born by Cesarean section and for that reason was entitled to wear the color of gold of the Empress.

The baby dressed according to the Hungarian fashion had on a muslin coat, shirt, large diapers binding the body and feet and a fancy dress. This baby is also tied into a pillow so that the mother may hang it to a tree while she works in the field.


# How this Penetrating Foam cleans your Teeth Better

*Colgate's not only polishes the outer surfaces . . . it cleanses completely, because it washes the impurities from the tiny tooth-crevices.*

DON'T be content with merely polishing the outer surface of your teeth—any toothpaste can do that. Use the dentifrice designed especially to go down into all those little crevices and fissures where impurities collect, and where ordinary brushing cannot reach.

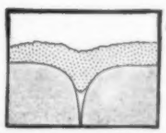
Recent scientific tests prove that Colgate's has a higher penetrating power than any other leading toothpaste, because of a remarkable property (low "surface-tension") possessed by the bubbling foam into which Colgate's breaks when brushed on teeth. This active foam gets down into every tiny crevice softening and dislodging the decaying impurities and washing them away in a detergent wave.

In this foam is carried a fine chalk powder, a polishing material used by dentists as safe, yet effective in keeping teeth white and attractive.

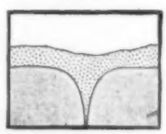
Remember, the function of a toothpaste is to *clean* the teeth. No toothpaste can cure pyorrhea; no toothpaste can correct an acid condition of the mouth. Colgate's does not claim to do these things—but it *does* claim to clean teeth better!

Mail the coupon for a trial tube.

***Why Colgate's Cleans Crevices Where Tooth Decay May Start***



Greatly magnified picture of tiny tooth crevice. Note how ordinary, sluggish toothpaste (having high "surface-tension") fails to penetrate down where the causes of decay lurk.



This diagram shows how Colgate's active foam (having low "surface-tension") penetrates deep into the crevice, cleansing it completely where the toothbrush cannot reach.

COLGATE, Dept. B-1804, P. O. Box 375, Grand Central Post Office, New York. FREE
Please send a trial tube of Colgate's Ribbon Dental Cream, with booklet "How to Keep Teeth and Mouth Healthy."

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## HOME LIBRARY OF HEALTH 98c

This Home Library of Health and Hygiene is written so everyone can understand it, by authorities and physicians eminent in their subjects. Each book readily fits the pocket, measuring 3½ x 5 inches in size. There are 20 excellent manuals of health in this library—all for 98c postpaid.

**20 Volumes . . 270,000 Words**

The titles in this 20-volume health library, comprising 1,184 pages, are:

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An ounce of prevention is worth a pound of cure: these books tell you how to watch for signs of trouble. This set is a guide to everyday health and hygiene. Fully authoritative. Written by eminent doctors. Just remit 98c and ask for "Health Library." We pay the postage.

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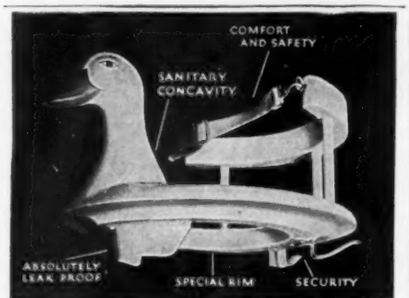


℞ Guided by the highest standard of ethics, members of the medical profession do not recommend *any* product unless they can do so with sincerity. Mothers everywhere should be thankful for this commendable practice. ¶More meaningful then is the stamp of approval placed upon Doo-Tee . . . the scientifically-designed Infant Trainer, by many baby specialists. (It is a matter of record that Doo-Tee is used in the offices of hundreds of pediatricians.) ¶Many exclusive advantages of construction contribute to Doo-Tee's favorable reception by those who are in the very best position to know. Among other features . . *children's legs are naturally and uniformly separated* and *allowed free movement at the sides.*

## DOO-TEE

DOO-TEE CORPORATION *615-23rd Avenue Oakland, California*

Enclosed find check to the amount of $4.95, for which you will ship one Doo-Tee Infant Trainer. Check color desired: Pink ☐ Blue ☐ White ☐

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## COLLEGIANS NEED AID FOR MENTAL PROBLEMS

Mental hygiene is not exclusively a matter of preventing insanity. Its aim is rather the prevention of human failure, in the words of Dr. Karl A. Menninger, who writes in *The Survey* of the application of mental hygiene among college students.

Each year thousands of college students fall by the wayside. In addition to the general problems brought about by the change of environment between home and college, college students have a lot of problems about which the outside world knows nothing or which it judges unsympathetically.

There are problems of athletic ambitions and disappointments; problems of Greek letter fraternities; problems of love affairs; problems of jealousies and antipathies; religious problems, physical problems, curricular problems, racial problems, economic problems, plus a great many more.

When one thinks of all this faced by a freshman student of only average intelligence, of average emotional control and average ability, at the average American university at the average age of eighteen, it is not surprising that some of them have "adjustment difficulties," says Dr. Menninger.

Mental hygiene counselors serve as trouble shooters. They are familiar with these problems, with the personality defects that are likely to entail difficulties and finally with the evidences of distress and the means available to alleviate it.

---

## REST AND CARE ARE VITAL IN INFANTILE PARALYSIS

Fall is the time when poliomyelitis, or infantile paralysis, is most prevalent. Although no epidemic is feared for this year, parents would do well to watch their children carefully for slight stomach upsets with fever and a discomfort that is out of proportion to the symptoms, the New York state department of health advises.

Pains in the neck, back and limbs, general weakness and clumsiness about the fourth day of the illness mark the beginning of paralysis. After the first week of the disease the most difficult part begins, namely, the period of rehabilitation.

After all pain and tenderness have left the muscles, then and then only is it time for a series of properly controlled exercises, carried out strictly under a physician's orders.

# Father hold Willie!

**For Willie's screams, kicks and threats to run away called for strong muscle-work in the "oily" nineties.**

**Lucky Willies of 1929—now they get Kellogg's Tasteless Castor Oil.**

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**Castor Oil doesn't need to taste bad to be good for you. All the bad taste and odor have been super-refined out of Kellogg's. No benzyl alcohol, saccharin, flavoring or coloring used as disguise. Kellogg's needs no disguise because it is 100% pure, and the only *refinery-bottled* castor oil which means it reaches you tasteless, fresh, wholesome.**

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*The Original*
## TASTELESS
## Castor Oil

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**PURITY**

**Never sold in bulk but always in the original 1 oz. (1 dose), 3 oz. and 7 oz. home-size bottles. Write for trial bottle enclosing 10c in stamps.**

★ Tested and approved by Good Housekeeping Institute.

**Sold by all druggists.**

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## WARN TUBERCULOUS TO STAY AT HOME IF POOR

The migration of persons ill with tuberculosis to the West has brought about an acute situation in California, Texas, Colorado, New Mexico and Arizona. For thousands go west with no means of support and in a short while they become public charges.

Laborers drifting to the beet fields of Colorado, across the cotton fields of Arizona and finally into California, constitute a great part of this deplorable migration. Nearly always there are one or two in the group who have tuberculosis. They defy health ordinances and state laws and spread infection. Invariably they need aid when winter comes on and the community in which they happen to be pays and pays for their presence, according to Mrs. Edythe Tate Thompson of the California bureau of health.

It is manifestly unfair that these states should be forced to care for sick and indigent persons who are not bona fide residents. To relieve them it is necessary to teach the tuberculous that rest, food, fresh air and peace of mind are the fundamentals of treatment and that it is worse than useless to seek a change of climate without money for support. The California board of health distributes each fall over the eastern and middle western states a poster bearing this message:

Tuberculosis demands rest, food, fresh air and peace of mind. This may not mean a change of climate. California has no public institutions with free care for nonresidents. With funds to live for a year, come, but do not rely on finding light work for support. The state board of health warns you, because it wishes to spare you homesickness and suffering from financial strain.

## CALIFORNIA INDIANS ARE TOO POOR TO BE WELL

Health conditions among Indians in California range from very poor to bad, according to a survey reported in the bulletin of the state board of health.

The principal factor in this situation is that the Indians do not earn enough money to live properly. They suffer from lack of food, are not properly housed and do not follow the common rules of personal hygiene and sanitation.

As a result they are unable to withstand attacks of disease. They have no facilities for adequate treatment and suffer greatly through lack of nursing care. Tuberculosis exacts a heavy toll and trachoma has left great numbers of Indians blind.


# Muffins *for* Diabetics

*Palatable muffins and more than thirty other foods, each strictly starch-free, may be included in your diet when you use Listers casein-palmnut Dietetic Flour.*

STRICTLY STARCH-FREE

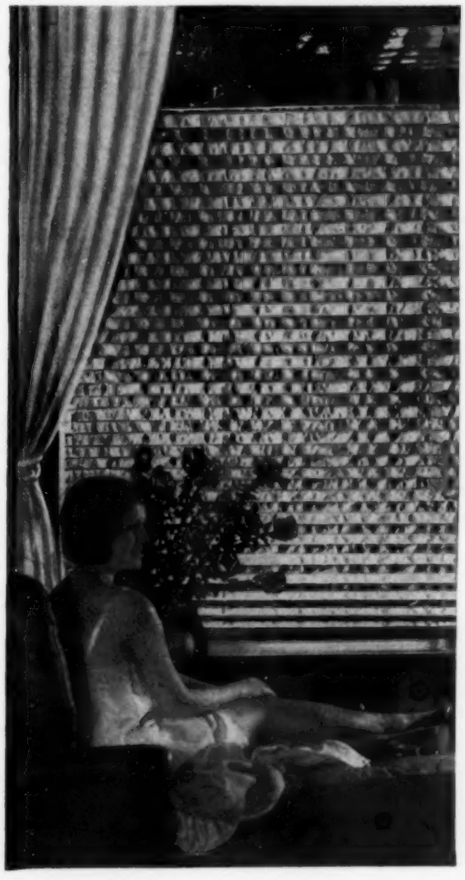
STRICTLY SUGAR-FREE

**Listers** CASEIN-PALMNUT DIETETIC **Flour**

is strictly starch-free, self-rising and easily made into a variety of foods in any home. Recipes accompany each carton of flour. Large carton, Listers Flour (enough for 30 bakings) . $4.85.

**Sold by leading druggists, fancy grocers or direct**

LISTER BROS. INC. 41 E. 42nd St. NEW YORK, N. Y.



# Privacy

## with light and ventilation

ATHEY SHADES shade or screen any part of the window. They are not wooden slats and have no rollers, springs, catches or latches. They do not have to be jerked for adjustment. And because they may be lowered from the top, allow a flood of soft light to reach the back of the room.

Besides being practical, they are the most beautiful and attractive shade ever devised.

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SHADES shade any part of the window from prying eyes or sun. ATHEY WEATHERSTRIPS with cloth to metal contact keep out all drafts.

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*Mother, keep your baby safe*

**from loose pins and buttons**

*The Vanta Baby Copyright 1926 Earnshaw Knitting Co.*

Ten million mothers, 50,000 doctors and nurses, 10,000 heads of infants' departments in stores—all recommend

**Vanta**

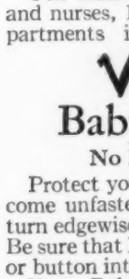
**Baby Garments**

**No Pins No Buttons**

Protect your baby from pins that will come unfastened and buttons that will turn edgewise to torment his little body. Be sure that he never can put a loose pin or button into his mouth.

Vanta Baby Garments dress your baby FOR THE FIRST TWO YEARS without a pin or button. They fasten with dainty bows of twistless tape, without turning baby once; adjustable as baby grows, and always fit.

They are of the finest quality. Button garments are for wear after danger from pins and buttons is over. Every Vanta garment is guaranteed non-shrinkable. Stores will make adjustment if any is unsatisfactory.



VEST

In cotton, wool, silk, linen mesh, sase and rayon; light or heavy weights as your doctor prescribes. Sizes, birth to six.

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Ask for Vanta Baby garments at your store. If you cannot get them write to EARNSHAW SALES CO., INC., Dept. 1202. Newton, Mass.

*FREE TO YOU*

**Vanta Pattern, also "Baby's Outfit," a book of 64 pages on care and dressing of babies.**

Earnshaw Sales Co., Inc.,
Dept. 1202, Newton, Mass.

Send free pattern and full instructions for making the new Vanta square-fold, pinless diaper. Also Baby's Outfit book and illustrated catalog, all in plain envelope.

Name.....

Address.....

City.....State.....


## BEGIN NOW TO PREVENT TRAGEDY NEXT YEAR

As soon as the Fourth of July is over is the time to begin planning a safe and sane Fourth for the next year, the National Safety Council observes. At least one town in the United States had a 100 per cent safety record for the Fourth of July just past. Allentown, Pa., the home of the present president of the National Safety Council, put on an intensive campaign to eliminate hazards on the Fourth, with the result that not a single fire or injury from fireworks was reported.

The safety organization suggests the following program to lessen accidents for the next observance of Independence Day:

1. Make local survey of recent Fourth of July accidents.
2. Examine local laws for regulating fireworks.
3. Plan, if needed, to strengthen these laws.
4. Arouse, for next Fourth, community sentiments for rigid law enforcement.
5. Study your community problem of bootleg fireworks.
6. Get support of boys, by organizing junior police, and junior firemen, to help support fireworks laws.
7. Begin planning now for a lively community Fourth celebration.

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## CLOWN ADDS HOLIDAY AIR TO HEALTH EXHIBIT

A circus clown carefully instructed in health "barking" coaxed visitors to the Rochester (N. Y.) exposition into "Healthy House," a feature sponsored by the Rochester Tuberculosis and Health Association. Here is a sample of the spiel he used, quoted from the bulletin of the association:

"Come on, folks, right this way to Healthy House. Everything free. Wont cost you a cent. Everybody healthy—that's what we want—step right in. See the poor little white rat that never drank any milk. See the three bears that sleep in their own separate beds, eat hot cereal and walk every day in the open air just as Goldilocks discovered them. Get a ticket for the antitoxin express train for No Diphtheria Town. Have the baby weighed—yes, we have pretty nurses who weigh all the babies under six. If you want to know how to make rugs, come in and see how the occupational therapists do it. They work with convalescent people, the people that didn't follow the kind of advice we give at Healthy House and want to get well as rapidly as possible."


# Make Money Selling HYGEIA

One man in a few spare moments when not engaged in his regular business earned HYGEIA commissions in 3 months, amounting to more than $130.00.

Another individual decided to act as HYGEIA representative and soon secured a group order of 24 subscriptions from the school superintendent of his city.

You can add to your present income just as easily, by selling HYGEIA in your locality, because almost every person is a prospect for The Health Magazine. You can sell HYGEIA not only to schools and to teachers, but to doctors, dentists, business men, to health centers, clinics, clubs, Y. M. C. A.'s, and to your friends of all ages. Your commissions from HYGEIA will net you a steady income or extra money for luxuries, depending upon the amount of time you devote to selling. As the first step toward this pleasant way of earning money, mail the coupon at once, for full information.

***Sell HYGEIA***

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American Medical Association,
535 N. Dearborn St., Chicago.

I am interested in your offer to HYGEIA representatives. Please send me full details about it.

Name.....

Address.....

## DEVISE WAYS TO REDUCE DUST HAZARDS

Dust is responsible for several kinds of diseases that occur in certain occupations. The most important of these is probably silicosis, a disease of the lungs caused by breathing air containing large amounts of free silica. Others are lead poisoning, respiratory troubles and irritations of the skin.

Industries and health officials have conducted extensive research for methods of controlling the dust problem and six kinds of preventive measures are widely used. These are listed by Dr. C. O. Sappington in a pamphlet on dust written for the National Safety Council.

Oil, sprays of water or jets of steam applied to the dust-producing materials are effective in the metal, lead and pottery industries, rock drilling, mining, blasting, stone crushing, cutting and grinding. The wetting processes have another value in the prevention of disastrous explosions of coal dust in mines.

Dust and fumes can sometimes be prevented from filling a large space by enclosing machinery or operations in air tight cases. Mechanical ventilation devices carry dust away from the worker satisfactorily in some processes of work. In some industries the dusts and gases contain valuable by-products which are extracted by condensation and absorption; for instance sulphuric acid fumes are collected and made into sulphuric acid.

Gas masks and respirators designed to filter the dust out of the air are widely used. Both are uncomfortable, however, and the students of the problems hope that working conditions can be made so nearly perfect as to obviate their use. It is said that a man wearing a gas mask can work hard only about half an hour. Respirators are more uncomfortable, but do not seriously interfere with a man's exertions.

Finally, the systematic daily cleaning of plants is necessary if harmful dusts are to be removed. Vacuum systems of cleaning are best, but sweeping with wet sawdust is effective. Moist cloths are best for removing dust from furniture, but beware of the old-fashioned feather duster. It merely redistributes the dust in new layers on the furniture and scatters it over the adjacent territory.

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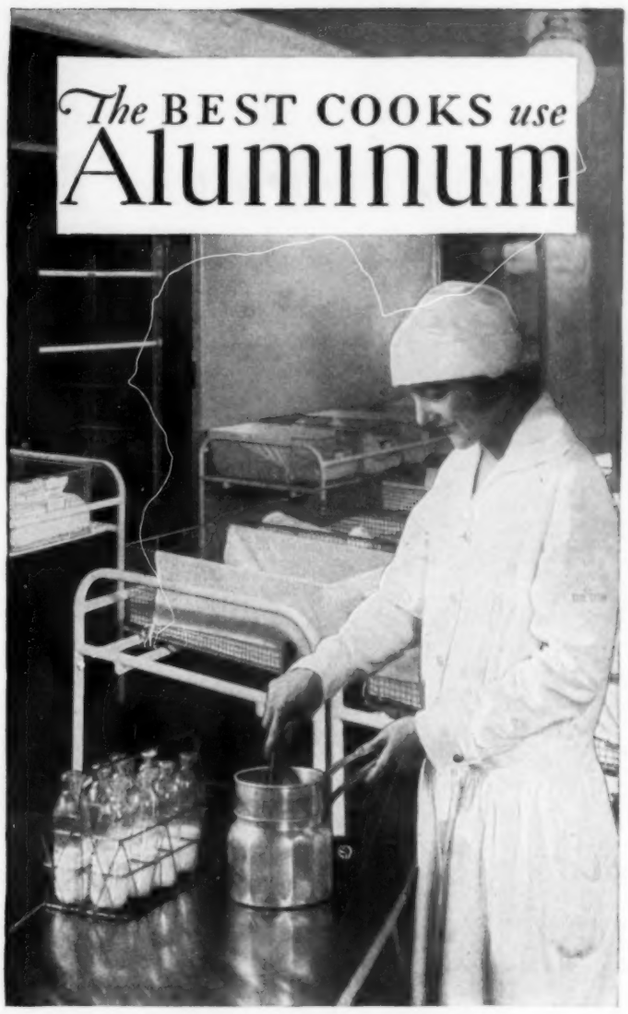
The building of a body fitted to bear the strains of later life is the business of childhood and youth.
—*Lee K. Frankel.*


# Safe Milk Saves Babies

Safe milk for the arriving generation! What could be more important? Is it any wonder that hospitals find *no* care too great to exercise in protecting the purity of milk for babies?

Milk feedings are prepared *in aluminum* in many of the country's foremost baby hospitals. Such noted institutions as the Milwaukee Children's Hospital, Sarah Morris Hospital, Chicago, and the Riley Hospital, Indianapolis, use aluminum utensils *in all departments* in recognition of their exceptional cooking ability, their economical durability, and their hygienic qualities.

That hospitals esteem aluminum so highly is a fact which the thoughtful housewife will weigh well. She, too, wants utensils that will serve her faithfully and thriftily, and play their part in appetizing, wholesome cookery. . . .

*The best cooks use aluminum.*

MAIL COUPON FOR BOOKLET

ALUMINUM WARES ASSOCIATION
*Publicity Division*, 844 Rush St., Chicago

Please send booklet, "The Precious Metal of the Kitchen," to address written below:

# DIPHTHERIA PREVENTION

## *Its Practical Application*

The use of TOXIN-ANTITOXIN *(Lederle)* in many thousands of children has brought about immunity against diphtheria which has lasted for nine years, and may continue throughout life.

**Toxin-Antitoxin** (***Lederle***) is especially useful for immunization of the following groups, except immediate contacts:

(1) All children from 6 months to 6 years of age.
(2) School children.
(3) Adults whose daily work might expose them to diphtheria.

The attention of parents is called to the special advantages of immunizing children of pre-school age (*group* 1). These children represent the most susceptible group and their immunization would soon result in community protection.

**Schick Test** (***Lederle***) applied six months to one year after immunization with TOXIN-ANTITOXIN, serves as a valuable guide in determining the actual development of immunity.

**Toxin-Antitoxin** (***Lederle***) and SCHICK TEST (*Lederle*) are readily available through your druggist.

*Consult Your Physician*

LEDERLE ANTITOXIN LABORATORIES
NEW YORK